

**Toward the standardization of biochar analysis: the COST Action TD1107
interlaboratory comparison**

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Table S1: Analytical Methods used in the inter-laboratory comparison

This compilation comprises all the methods used to analyze all the parameters in this inter-laboratory comparison. The parameter groups are the same as in Tab. 1. Parameters that were analyzed with same method are collated. The method codes are a combination of the measurement method and the sample preparation separated by a comma. They are used in the Box plots in Fig. 2 above the boxes to specify the methods used by the corresponding laboratory. Laboratories were free to use their own methods. Their number in Tab. S1 is the same as in the Box plots of Fig. S2. MW = Microwave heating

Group	Parameter	Method code used in Fig. S2	Method description	Used by laboratories
CHNOS & Ash	C, H, N, S	Elemental_An	Dry combustion using an elemental analyzer	1, 2 (no S) , 4, 5A, 7A (no H,S), 10 (only C), 11 (no S), 13 (no S), 16, 17A, 18, 19, 20 (no H,S), 21 (no S), 24 (only C)
		N	N-Kjeldahl	Wet digestion with H ₂ SO ₄ and a catalyst
	O	Calculation	Calculation as difference to total mass	1, 4
		Elemental_An	Dry combustion using an elemental analyzer	11, 21
	Ash	Ash 450 °C	Calcination at 450 °C	24
		Ash 500 °C	Calcination at 500 °C	21
		Ash 550 °C	Calcination at 550 °C	4, 5A, 7A, 16, 22
		Ash 600 °C	Calcination at 600 °C	6
		Ash 750 °C	Calcination at 750 °C	2, 13
		Ash 800 °C	Calcination at 800 °C	11
Ash 815 °C		Calcination at 815 °C	1	
Ash 900 °C		Calcination at 900 °C	15, 18	
Main elements	Ca, Fe, K, Mg, Mn, Na, P, S, ICP-OES	AAS, HNO ₃ -H ₂ O ₂ _MW	AAS-Measurement, digestion HNO ₃ /H ₂ O ₂ & MW	5 (no P, S)
		ICP-MS, AR_MW	ICP-MS-Measurement, digestion Aqua regia & MW	13
		ICP-OES, AR_MW	ICP-OES-Measurement, digestion Aqua regia & MW	8 (no S)
		ICP-OES, Ash_HCl	ICP-OES-Measurement, ash extract with HCl	11
		ICP-OES, AshHNO ₃ -H ₂ O ₂	ICP-OES-Measurement, ash extract with HNO ₃ /H ₂ O ₂	21 (no P)
		ICP-OES, HNO ₃ _MW	ICP-OES-Measurement, digestion HNO ₃ & MW	16
		ICP-OES, HNO ₃ -H ₂ O ₂ _MW	ICP-OES-Measurement, digestion HNO ₃ /H ₂ O ₂ & MW	12 (no P, S)
ICP-OES/MS, LiBO ₂ _Fu&HCl	ICP-OES/MS-Measurement, LiBO ₂ fusion & HCl dissolution	4 (no Mn)		
Heavy metals	Cd, Cr, Cu, Ni, Pb, Zn	AAS, AR_MW	AAS-Measurement, digestion Aqua regia & MW	24
		AAS, AR-extract	AAS-Measurement, extraction with Aqua regia	6
		AAS, HNO ₃ -H ₂ O ₂ _MW	AAS-Measurement, digestion HNO ₃ /H ₂ O ₂ & MW	5
		ICP-MS, AR_MW	ICP-MS-Measurement, digestion Aqua regia & MW	13
		ICP-MS, HNO ₃ -H ₂ O ₂ _MW	ICP-MS-Measurement, digestion HNO ₃ /H ₂ O ₂ & MW	12
		ICP-MS, HNO ₃ -H ₂ O ₂ -HF	ICP-MS-Measurement, digestion HNO ₃ /H ₂ O ₂ /HF & MW	4
		ICP-OES, AR_MW	ICP-OES-Measurement, digestion Aqua regia & MW	8
		ICP-OES, Ash_HCl	ICP-OES-Measurement, ash extract with HCl	11
		ICP-OES, AshHNO ₃ -H ₂ O ₂	ICP-OES-Measurement, ash extract with HNO ₃ /H ₂ O ₂	21
		ICP-OES, HNO ₃ _MW	ICP-OES-Measurement, digestion HNO ₃ & MW	16
PAH	Sum & Congeners	GC-MS, Toluol_Extra	GC-MS-Measurement, extraction with toluene	4, 11, 16
		GC-MS & 3IS, Acetone-Cycl	GC-MS-Measurement with 3 internal standards, extraction with acetone/cyclohexane	5A
		GC-MS & 16IS, Acetone-Cycl	GC-MS-Measurement with 16 internal standards, extraction with acetone/cyclohexane	5B
	FLA, NAP, PHE	HPLC-FLD, Acetonitrile	HPLC-FLD-Measurement, extraction with acetonitrile	19
Further parameters	pH	CaCl ₂ _2.5	Extraction with 0.5 M CaCl ₂ 1:2.5 m/v	17B
		CaCl ₂ _5	Extraction with 0.01 M CaCl ₂ 1:5 m/v	4, 11
		CaCl ₂ _10	Extraction with 0.01 M CaCl ₂ 1:10 m/v	7C, 19
		H ₂ O	Extraction with H ₂ O, ratio not given (ASTM D6851 - 02)	23
		H ₂ O_5	Extraction with H ₂ O 1:5 m/v	19
		H ₂ O_10	Extraction with H ₂ O 1:10 m/v	2
		H ₂ O_20	Extraction with H ₂ O 1:20 m/v	8
	pH, EC	H ₂ O_2.5	Extraction with H ₂ O 1:2.5 m/v	6, 17A
		H ₂ O_5	Extraction with H ₂ O 1:5 m/v	24
		H ₂ O_5vm/v	Extraction with H ₂ O 1:5 v fresh material/v	7B
		H ₂ O_10	Extraction with H ₂ O 1:10 m/v	5, 7A, 13
		H ₂ O_20	Extraction with H ₂ O 1:20 m/v	18, 21
		H ₂ O_25	Extraction with H ₂ O 1:25 m/v	16
	EC	H ₂ O_7	Extraction with H ₂ O 1:7 m/v	8
		H ₂ O_10	Extraction with H ₂ O 1:10 m/v	4, 19
	SSA	N ₂ _BET	N ₂ gas adsorption & BET model, multipoint calibration	1, 9, 11, 13, 17A, 19
		N ₂ _BET_1PCal	N ₂ gas adsorption & BET model, single point calibration	4
		CO ₂ _BET	CO ₂ gas adsorption & BET model, multipoint calibration	21

Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Box plot of the laboratory results



Sample:	BC1	Reproducibility SD:	3,58 % w/w
Parameter:	Ash	Rel. reproducibility SD:	31,60%
Mean ± uncertainty:	11,35 ± 1,88 % w/w	Repeatability SD:	1,04 % w/w
Reference value:	13,30 % w/w	Rel. repeatability SD:	9,15%

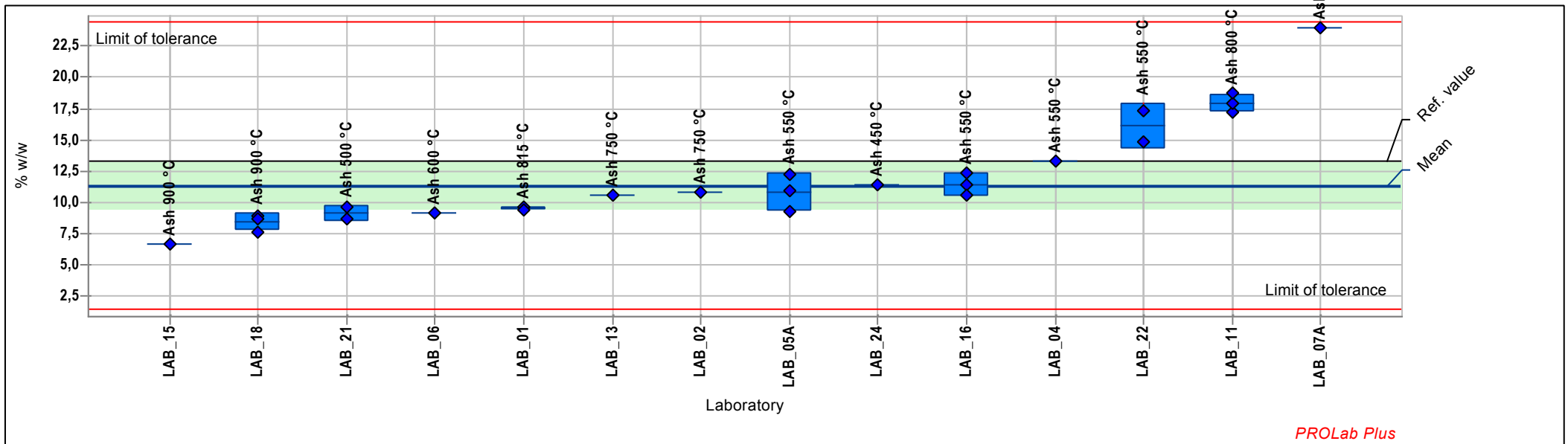


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: C
Mean ± uncertainty: 81,93 ± 2,70 % w/w
Reference value: 81,20 % w/w
Reproducibility SD: 5,24 % w/w
Rel. reproducibility SD: 6,40%
Repeatability SD: 1,97 % w/w
Rel. repeatability SD: 2,41%

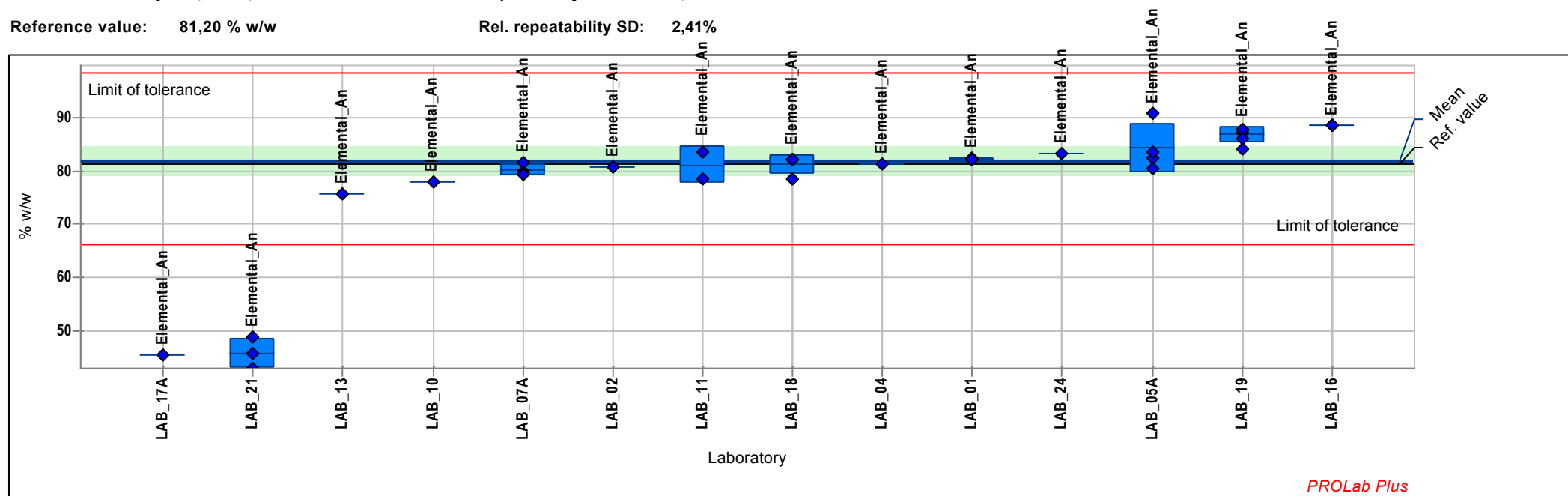


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	14083 mg/kg
Parameter:	Ca	Rel. reproducibility SD:	64,88%
Mean ± uncertainty:	21705 ± 9953 mg/kg	Repeatability SD:	629 mg/kg
Reference value:	33700 mg/kg	Rel. repeatability SD:	2,90%

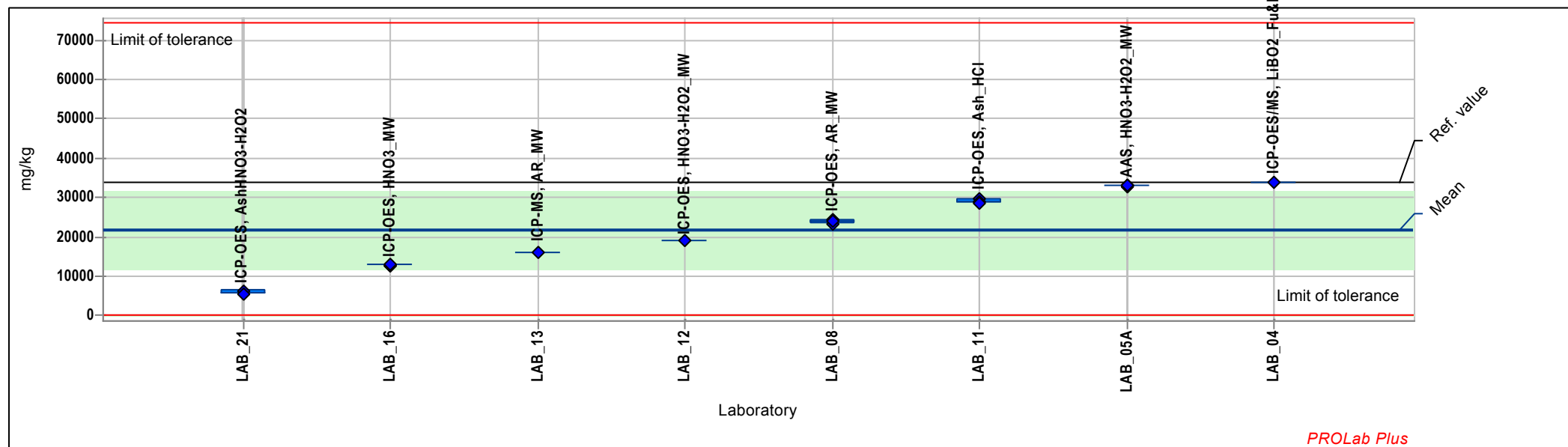


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: Cd
Mean ± uncertainty: 0,061 ± 0,144 mg/kg
Reference value:

Reproducibility SD: 0,279 mg/kg
Rel. reproducibility SD: 458,26%
Repeatability SD: 0,279 mg/kg
Rel. repeatability SD: 458,26%

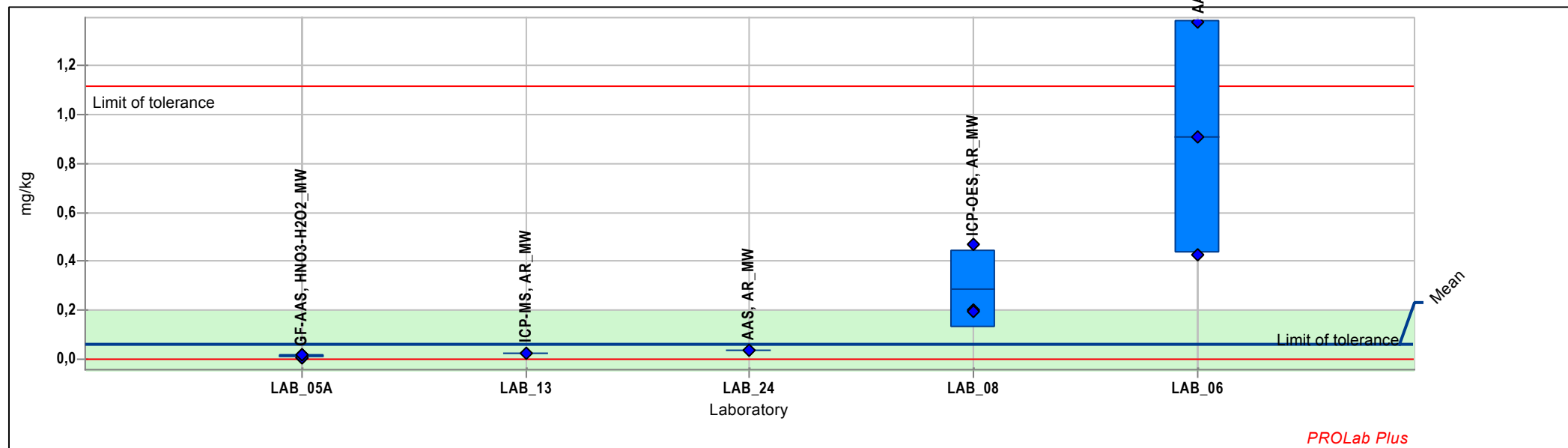


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Box plot of the laboratory results



Sample: BC1
Parameter: Cr
Mean ± uncertainty: 16,3 ± 12,4 mg/kg
Reference value: 9,0 mg/kg

Reproducibility SD: 16,4 mg/kg
Rel. reproducibility SD: 100,74%
Repeatability SD: 1,0 mg/kg
Rel. repeatability SD: 6,36%

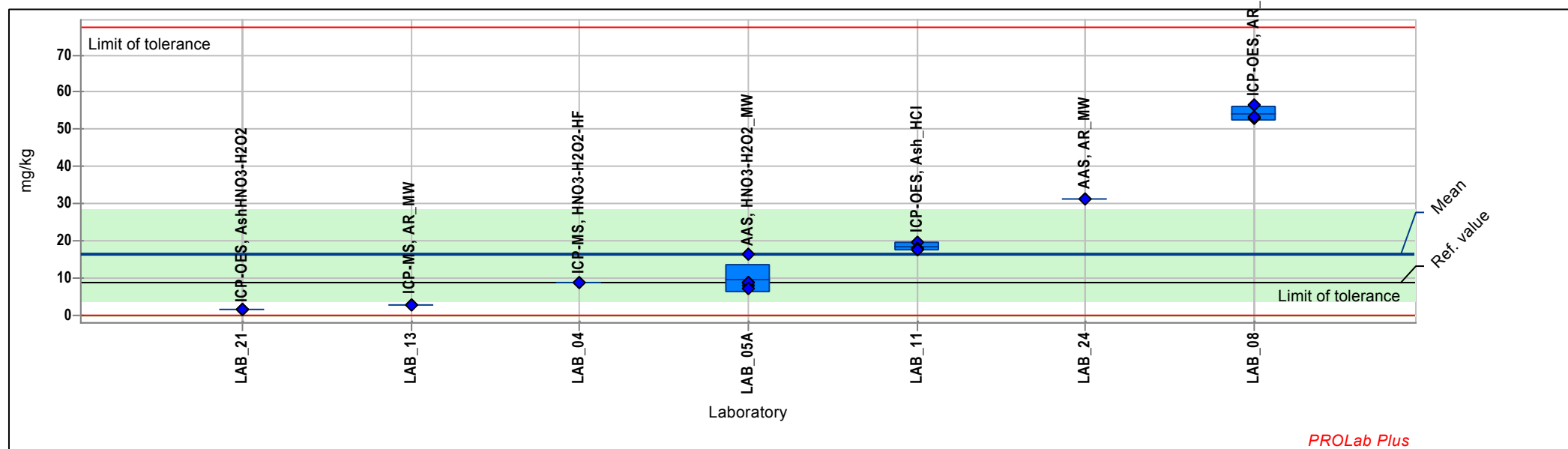


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	5,6 mg/kg
Parameter:	Cu	Rel. reproducibility SD:	46,43%
Mean ± uncertainty:	12,0 ± 3,5 mg/kg	Repeatability SD:	1,2 mg/kg
Reference value:	11,0 mg/kg	Rel. repeatability SD:	10,20%

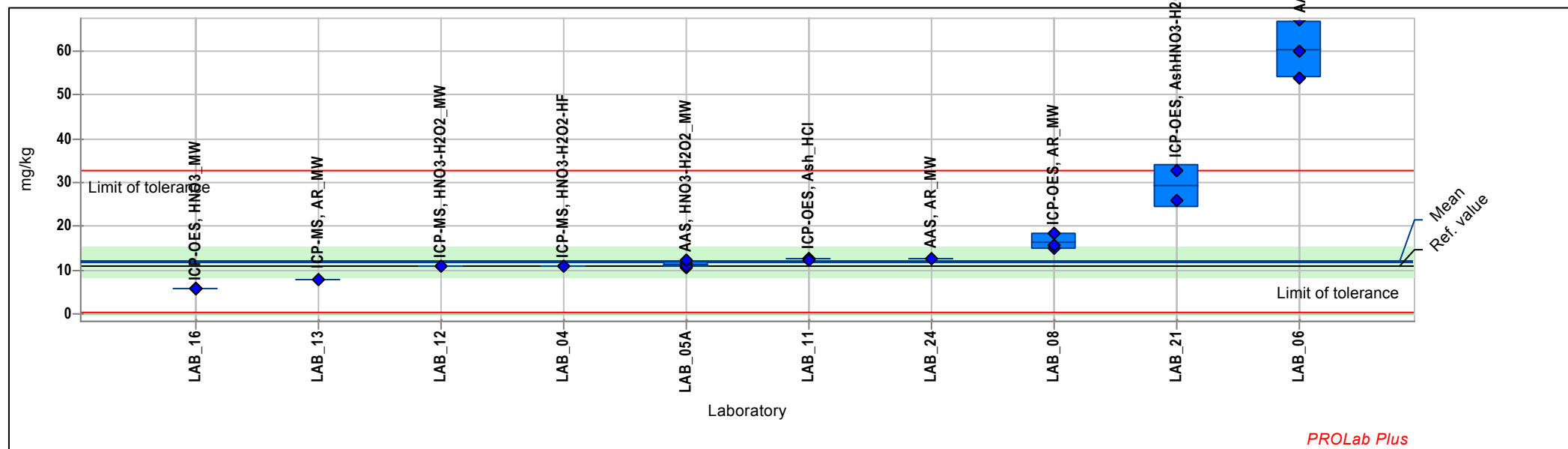


Figure S1

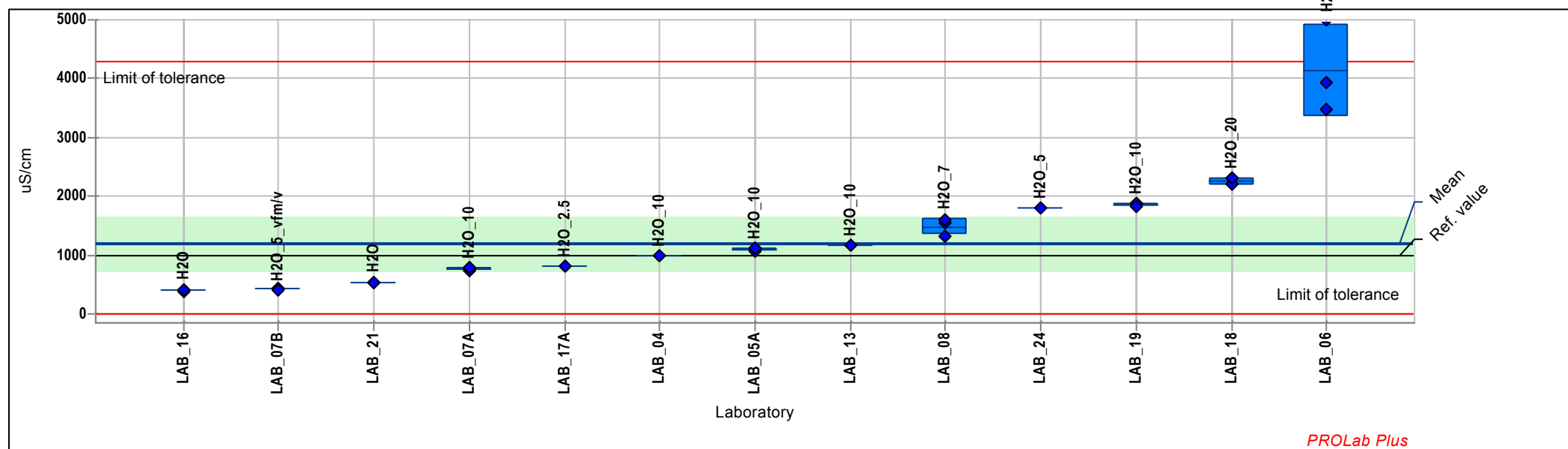
Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: EC
Mean ± uncertainty: 1203 ± 458 uS/cm
Reference value: 989 uS/cm

Reproducibility SD: 826 uS/cm
Rel. reproducibility SD: 68,68%
Repeatability SD: 31 uS/cm
Rel. repeatability SD: 2,62%



PROLab Plus

Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	492 mg/kg
Parameter:	Fe	Rel. reproducibility SD:	45,29%
Mean ± uncertainty:	1087 ± 348 mg/kg	Repeatability SD:	38 mg/kg
Reference value:	1840 mg/kg	Rel. repeatability SD:	3,45%

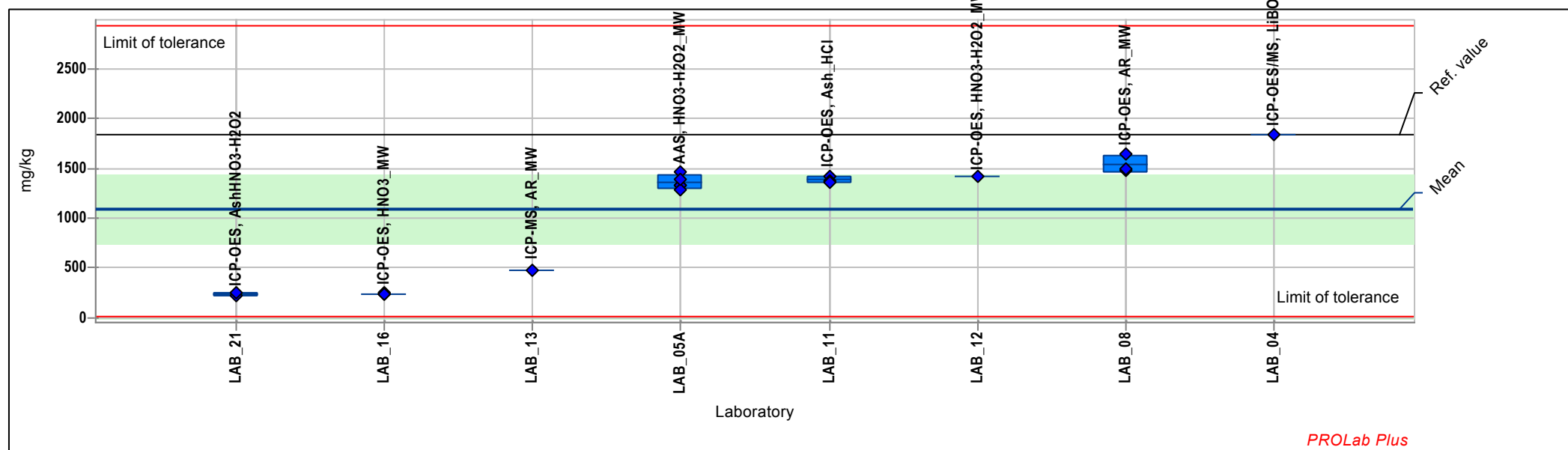


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: H
Mean ± uncertainty: 1,47 ± 0,19 % w/w
Reference value: 1,19 % w/w

Reproducibility SD: 0,31 % w/w
Rel. reproducibility SD: 20,99%
Repeatability SD: 0,12 % w/w
Rel. repeatability SD: 8,17%

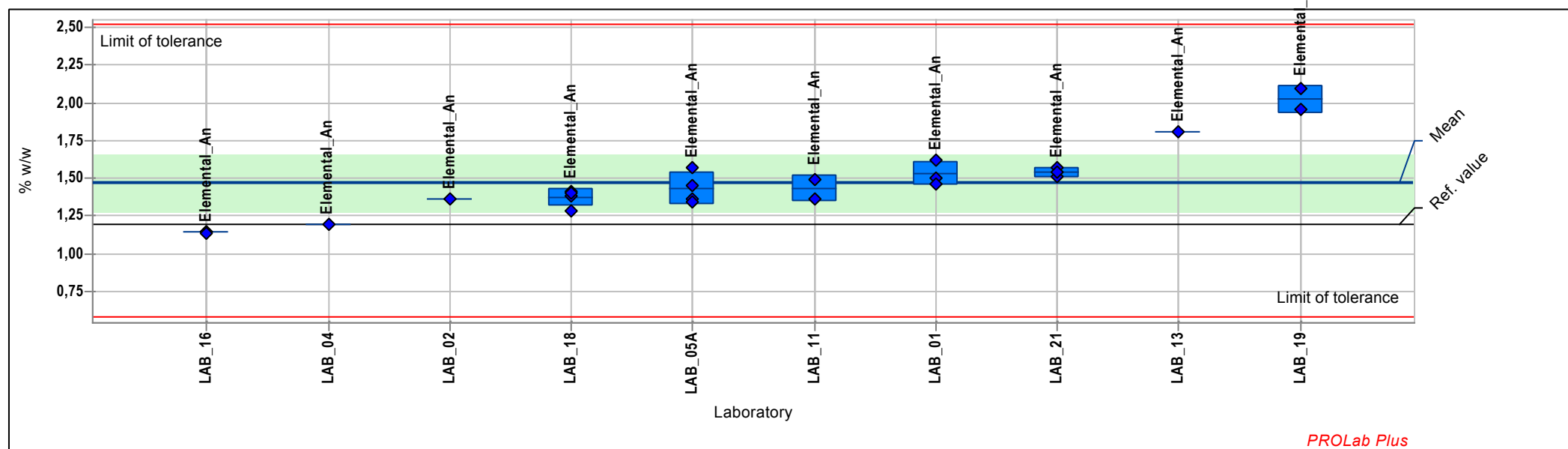


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	4144 mg/kg
Parameter:	K	Rel. reproducibility SD:	61,27%
Mean ± uncertainty:	6763 ± 2929 mg/kg	Repeatability SD:	111 mg/kg
Reference value:	9400 mg/kg	Rel. repeatability SD:	1,64%

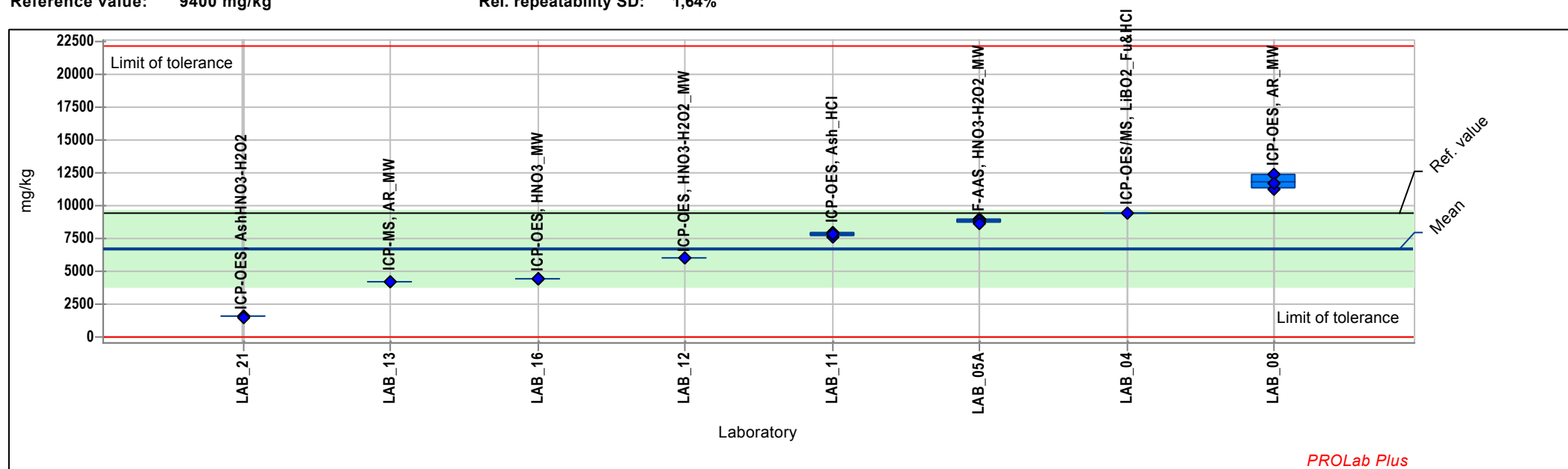


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	489 mg/kg
Parameter:	Mg	Rel. reproducibility SD:	28,35%
Mean ± uncertainty:	1724 ± 345 mg/kg	Repeatability SD:	25 mg/kg
Reference value:	2320 mg/kg	Rel. repeatability SD:	1,46%

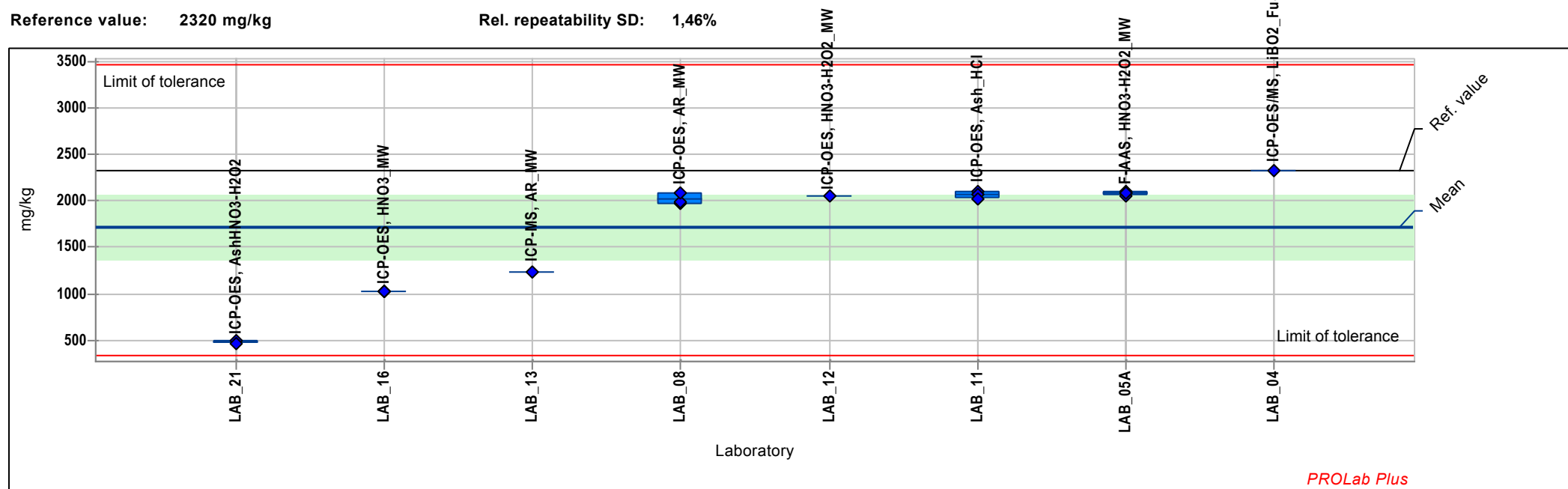


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
 Parameter: Mn
 Mean ± uncertainty: 301 ± 50 mg/kg
 Reference value:

Reproducibility SD: 66 mg/kg
 Rel. reproducibility SD: 21,96%
 Repeatability SD: 5 mg/kg
 Rel. repeatability SD: 1,53%

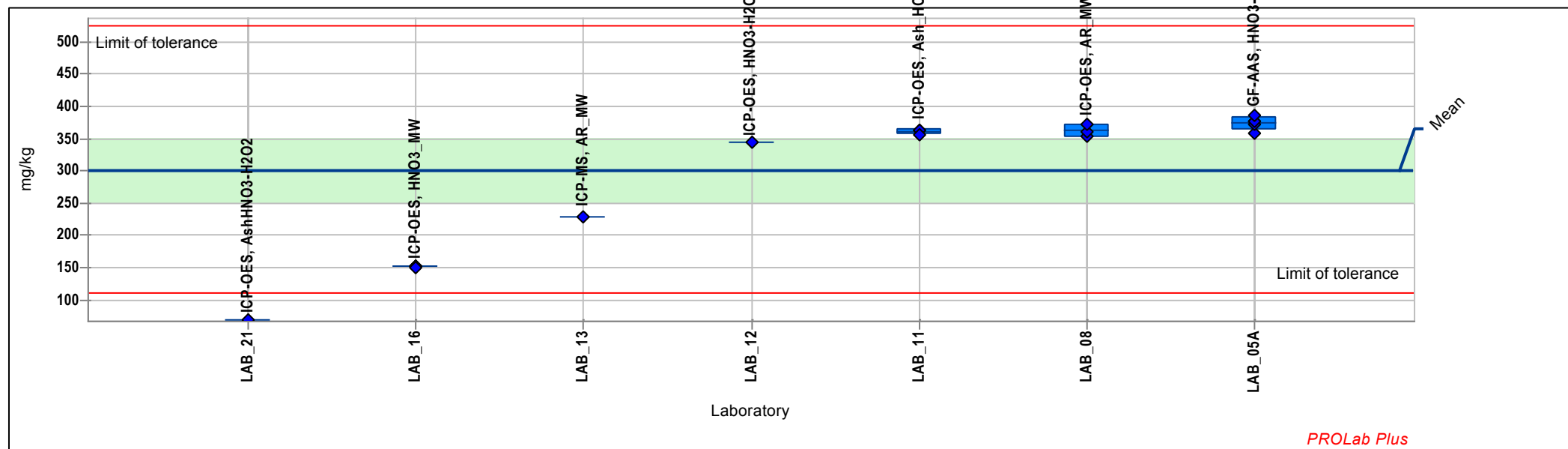


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	0,21 % w/w
Parameter:	N	Rel. reproducibility SD:	60,74%
Mean ± uncertainty:	0,35 ± 0,12 % w/w	Repeatability SD:	0,02 % w/w
Reference value:	0,42 % w/w	Rel. repeatability SD:	4,43%

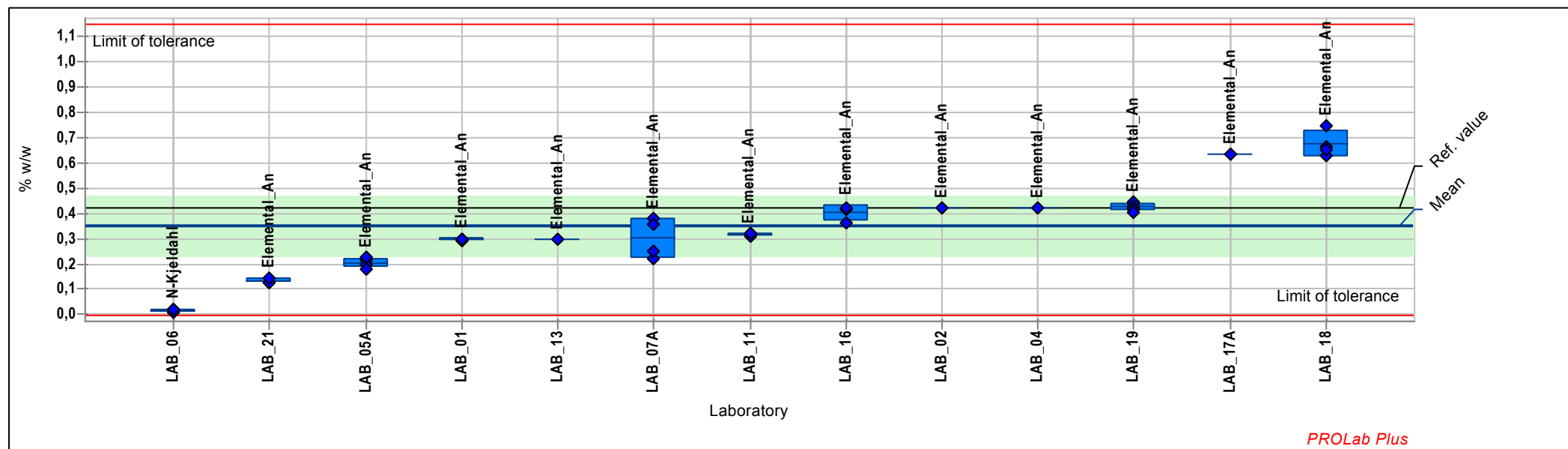


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	52 mg/kg
Parameter:	Na	Rel. reproducibility SD:	50,50%
Mean ± uncertainty:	103 ± 37 mg/kg	Repeatability SD:	8 mg/kg
Reference value:	690 mg/kg	Rel. repeatability SD:	7,81%

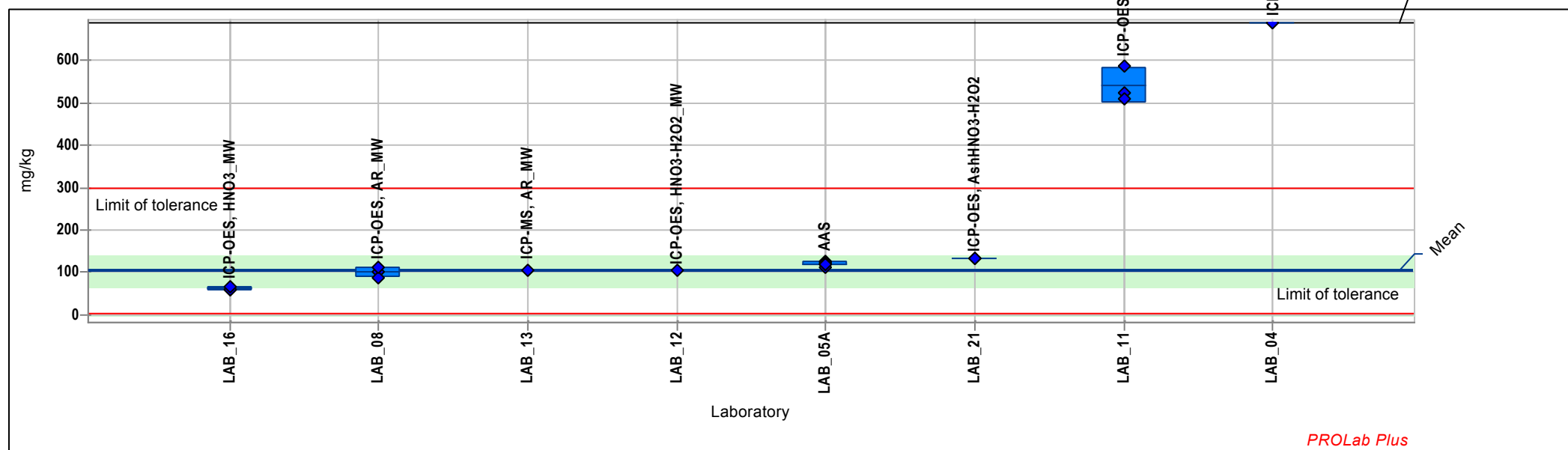


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	8,7 mg/kg
Parameter:	Ni	Rel. reproducibility SD:	91,69%
Mean ± uncertainty:	9,4 ± 6,1 mg/kg	Repeatability SD:	1,1 mg/kg
Reference value:	7,0 mg/kg	Rel. repeatability SD:	11,31%

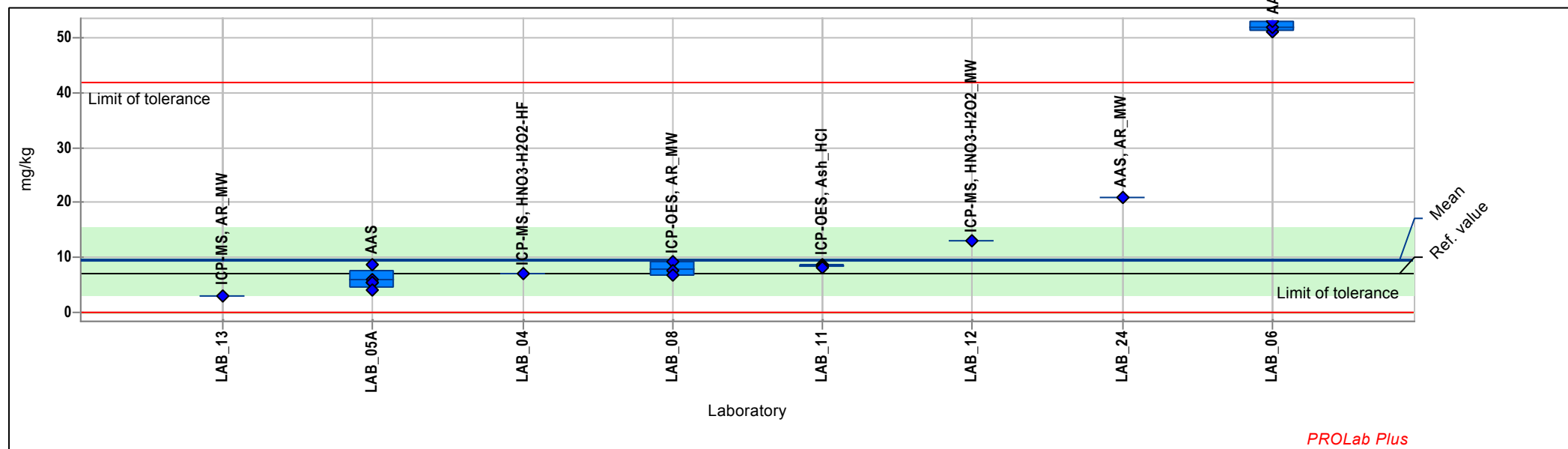


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	2,03 % w/w
Parameter:	O	Rel. reproducibility SD:	35,32%
Mean ± uncertainty:	5,76 ± 2,03 % w/w	Repeatability SD:	0,17 % w/w
Reference value:	3,80 % w/w	Rel. repeatability SD:	2,89%

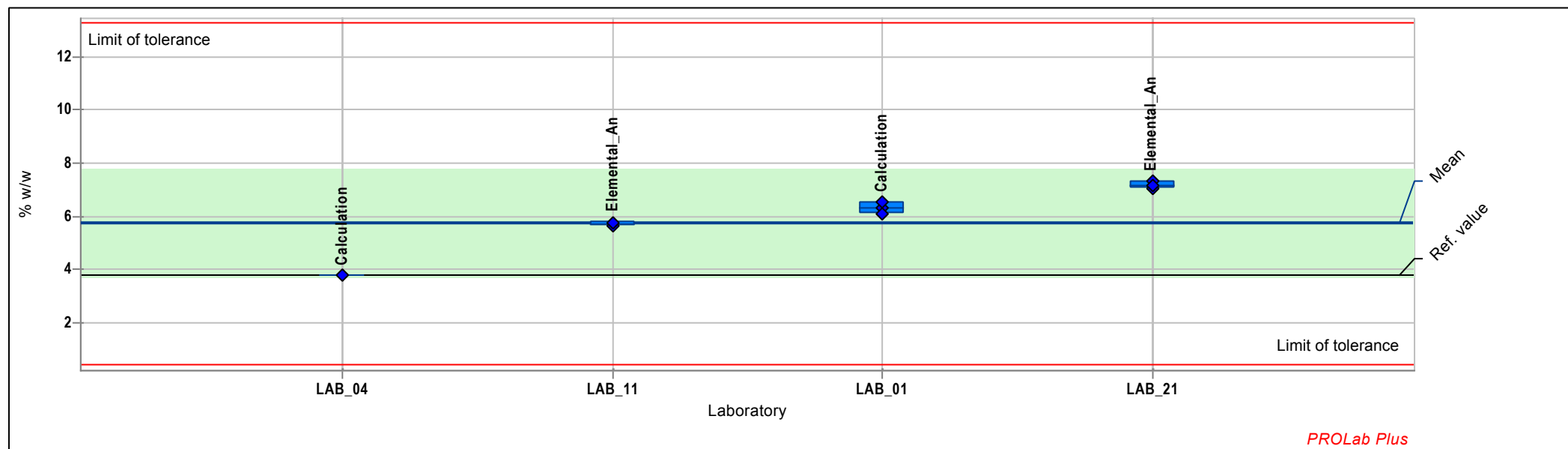


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	152 mg/kg
Parameter:	P	Rel. reproducibility SD:	19,83%
Mean ± uncertainty:	765 ± 136 mg/kg	Repeatability SD:	3 mg/kg
Reference value:	870 mg/kg	Rel. repeatability SD:	0,43%

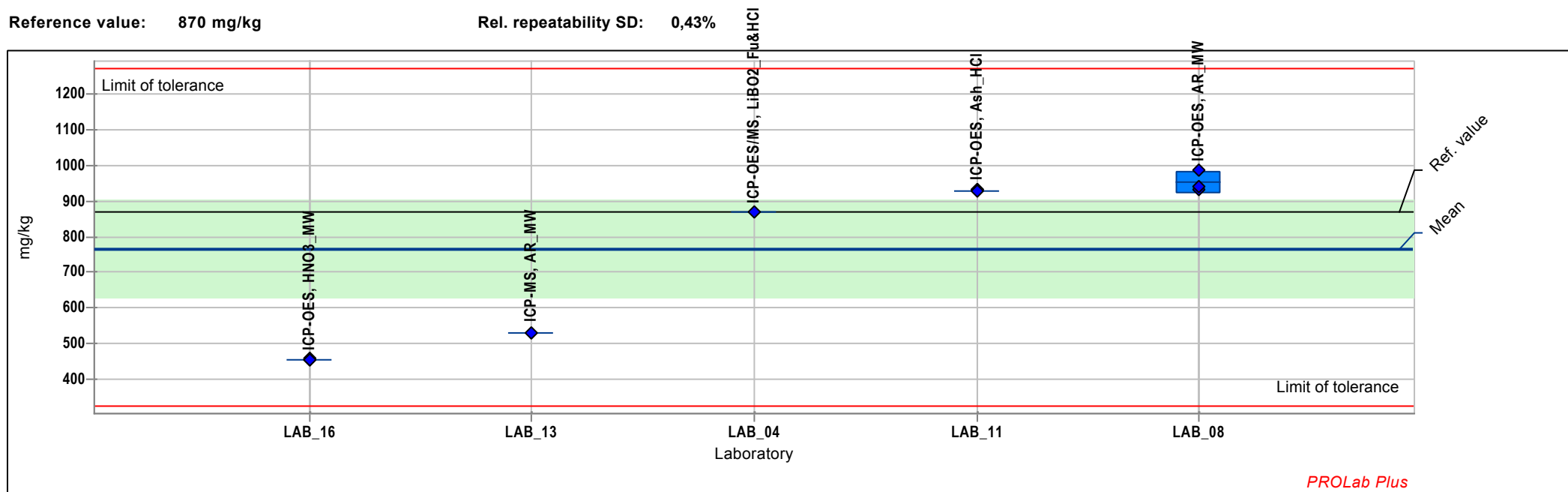


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: PAH_Sum
Mean ± uncertainty: 2893,4 ± 1741,6 ng/g
Reference value: 6004,1 ng/g

Reproducibility SD: 1951,1 ng/g
Rel. reproducibility SD: 67,43%
Repeatability SD: 175,3 ng/g
Rel. repeatability SD: 6,06%

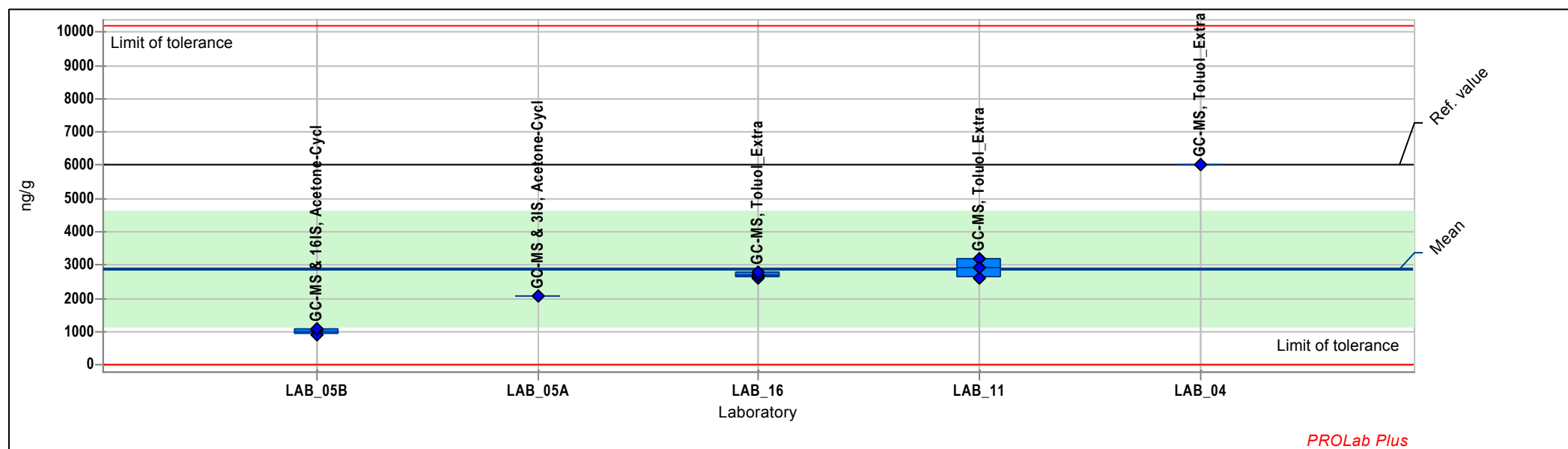


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	29,5 ng/g
Parameter:	PAH_Acenaphthene	Rel. reproducibility SD:	139,74%
Mean ± uncertainty:	21,1 ± 26,4 ng/g	Repeatability SD:	1,5 ng/g
Reference value:	184,0 ng/g	Rel. repeatability SD:	6,92%

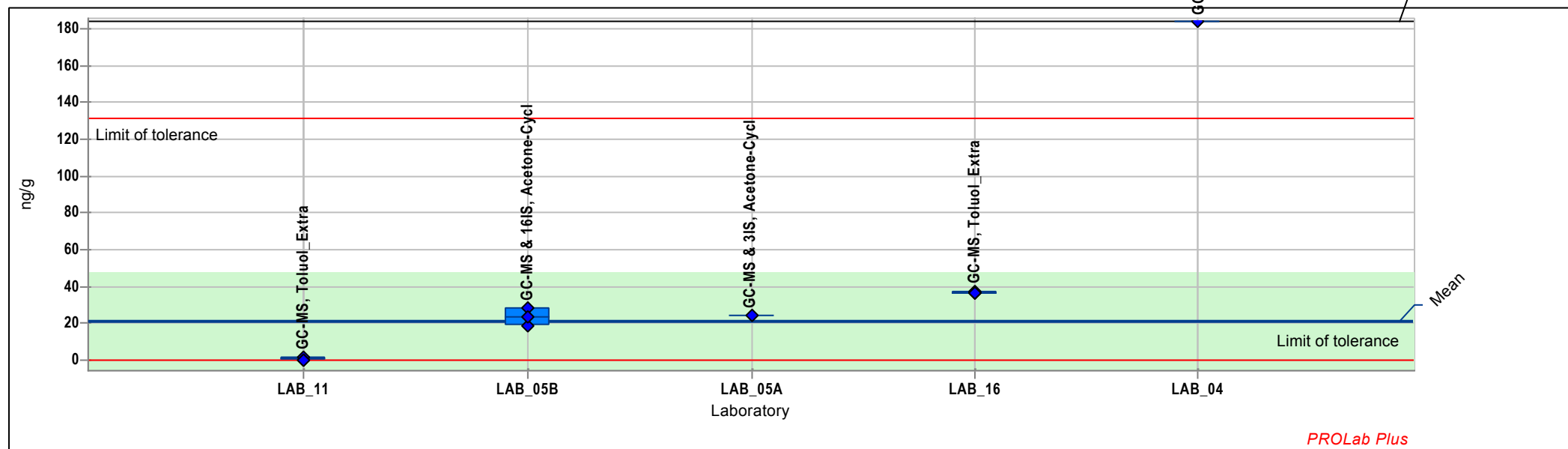


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	42,3 ng/g
Parameter:	PAH_Acenaphthylene	Rel. reproducibility SD:	51,57%
Mean ± uncertainty:	81,9 ± 37,6 ng/g	Repeatability SD:	5,8 ng/g
Reference value:	82,0 ng/g	Rel. repeatability SD:	7,04%

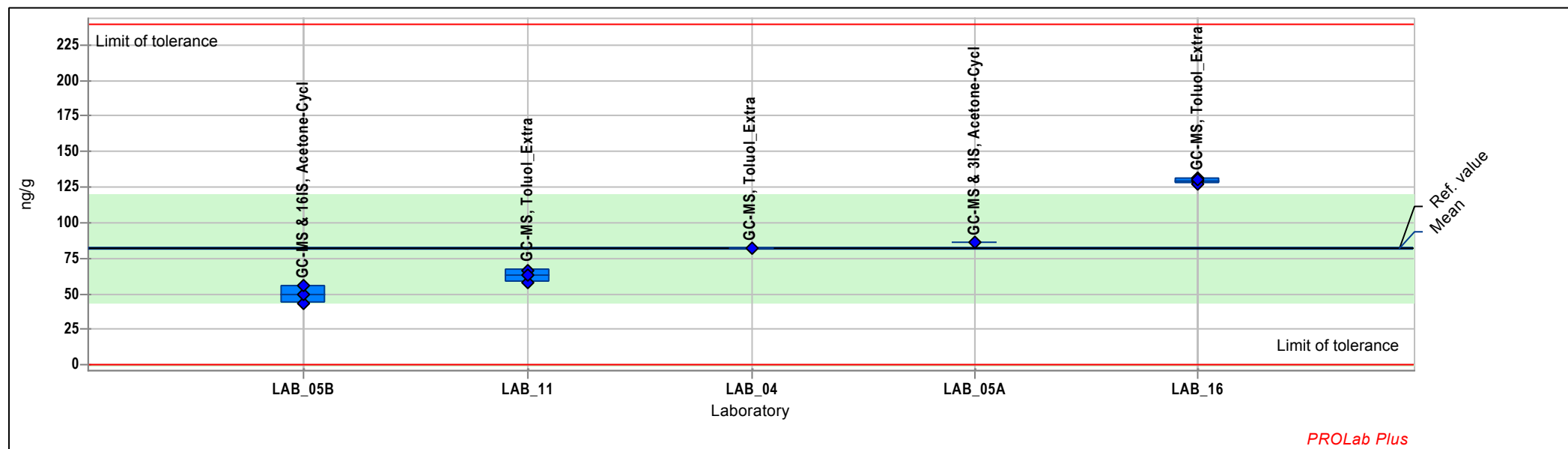


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	95,1 ng/g
Parameter:	PAH_Anthracene	Rel. reproducibility SD:	104,56%
Mean ± uncertainty:	91,0 ± 95,0 ng/g	Repeatability SD:	5,4 ng/g
Reference value:	194,0 ng/g	Rel. repeatability SD:	5,97%

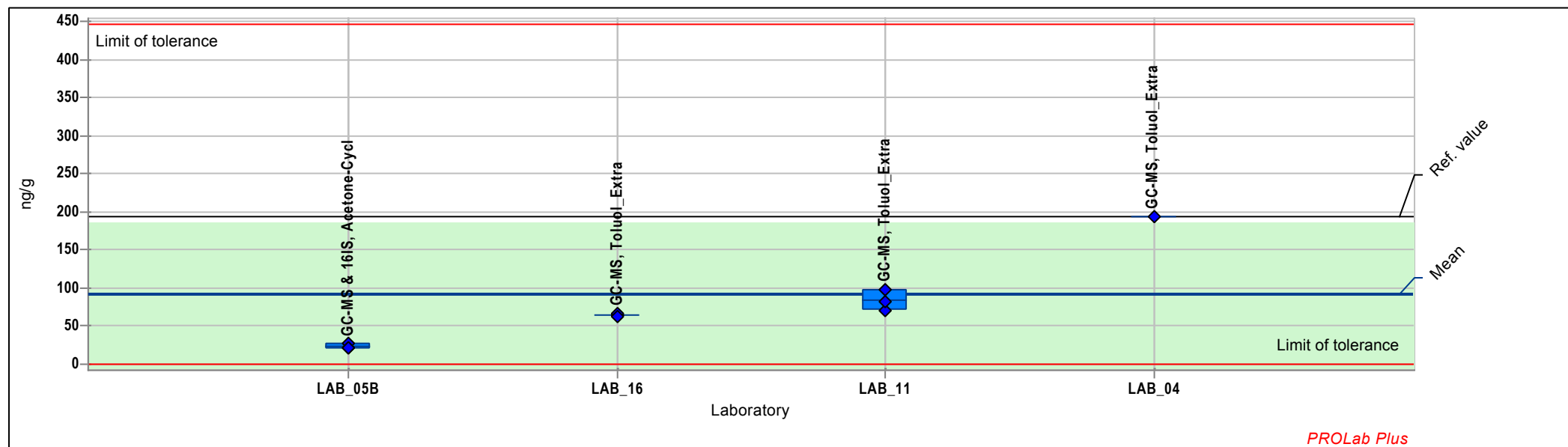


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: PAH_Benzo[a]anthracene
Mean ± uncertainty: 63,7 ± 47,3 ng/g
Reference value: 133,0 ng/g

Reproducibility SD: 53,0 ng/g
Rel. reproducibility SD: 83,19%
Repeatability SD: 4,0 ng/g
Rel. repeatability SD: 6,28%

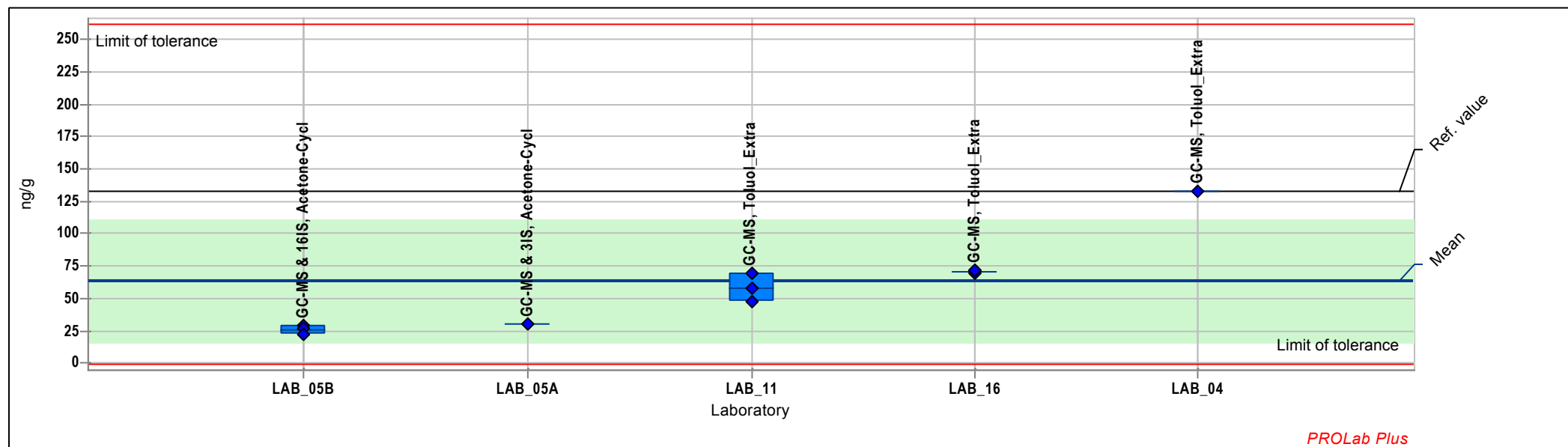


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	34,1 ng/g
Parameter:	PAH_Benzo[a]pyrene	Rel. reproducibility SD:	56,85%
Mean ± uncertainty:	60,0 ± 30,5 ng/g	Repeatability SD:	1,8 ng/g
Reference value:	82,0 ng/g	Rel. repeatability SD:	2,98%

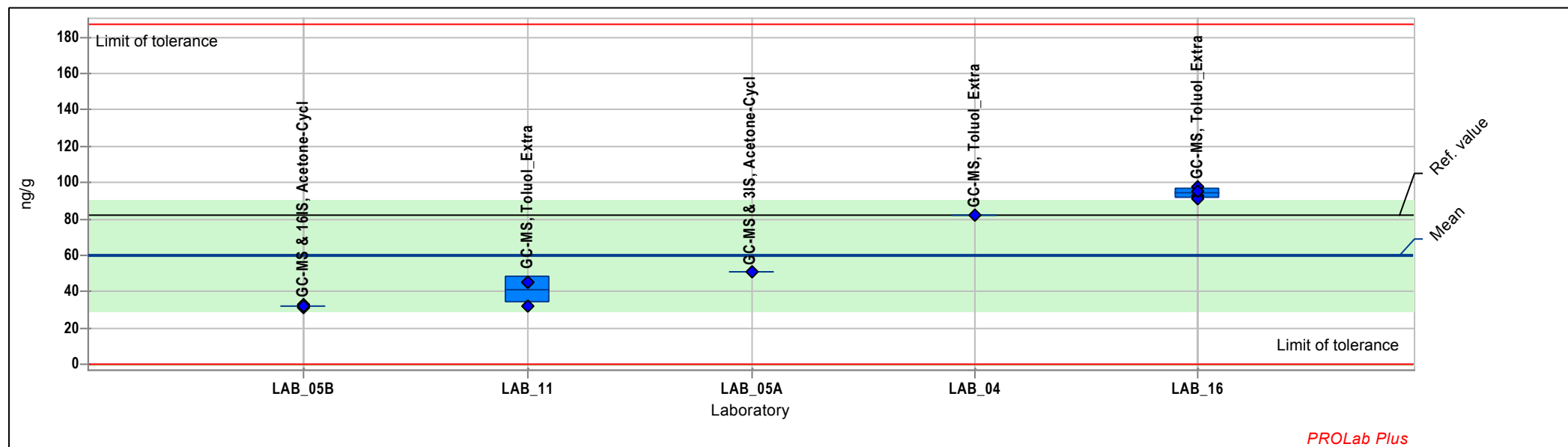


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: PAH_Benzo[b]fluoranthene
Mean ± uncertainty: 60,7 ± 38,2 ng/g
Reference value: 82,0 ng/g

Reproducibility SD: 43,1 ng/g
Rel. reproducibility SD: 71,04%
Repeatability SD: 8,3 ng/g
Rel. repeatability SD: 13,72%

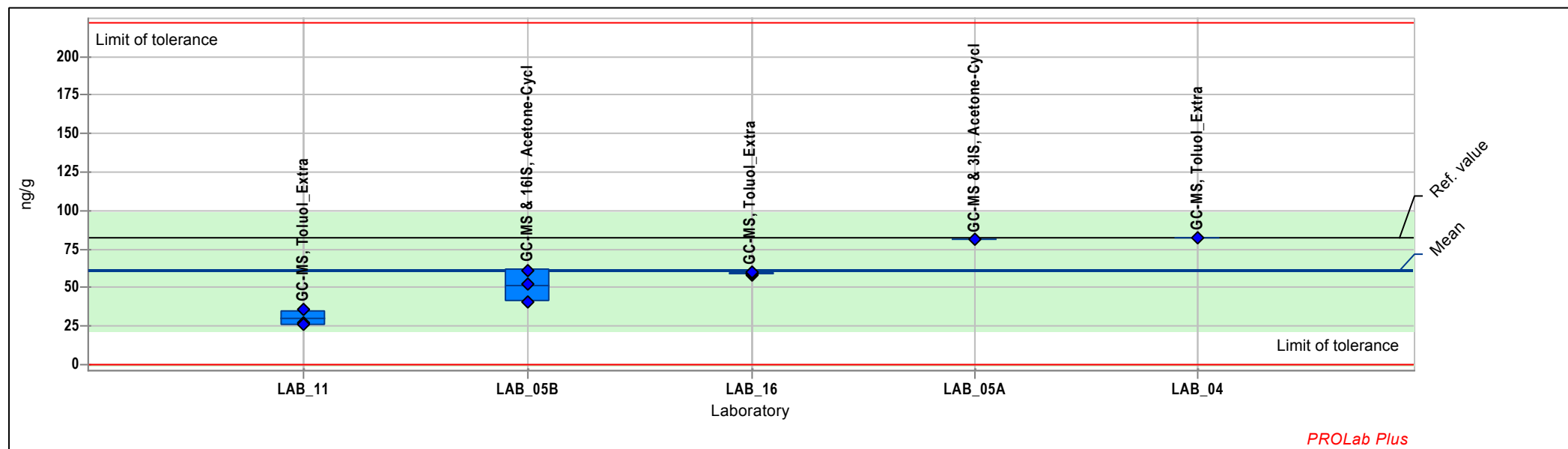


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: PAH_Benzo[k]fluoranthene
Mean ± uncertainty: 28,0 ± 21,2 ng/g
Reference value: 51,0 ng/g

Reproducibility SD: 23,7 ng/g
Rel. reproducibility SD: 84,62%
Repeatability SD: 1,3 ng/g
Rel. repeatability SD: 4,58%

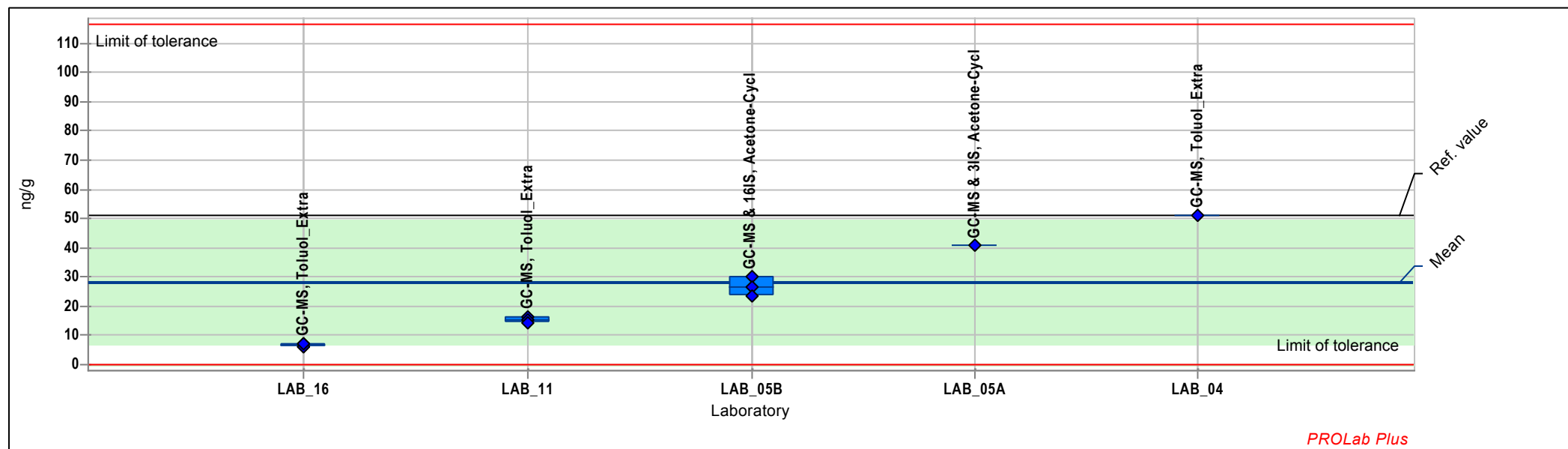


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	40,8 ng/g
Parameter:	PAH_Benzo[ghi]perylene	Rel. reproducibility SD:	119,97%
Mean ± uncertainty:	34,0 ± 46,8 ng/g	Repeatability SD:	5,7 ng/g
Reference value:	31,0 ng/g	Rel. repeatability SD:	16,61%

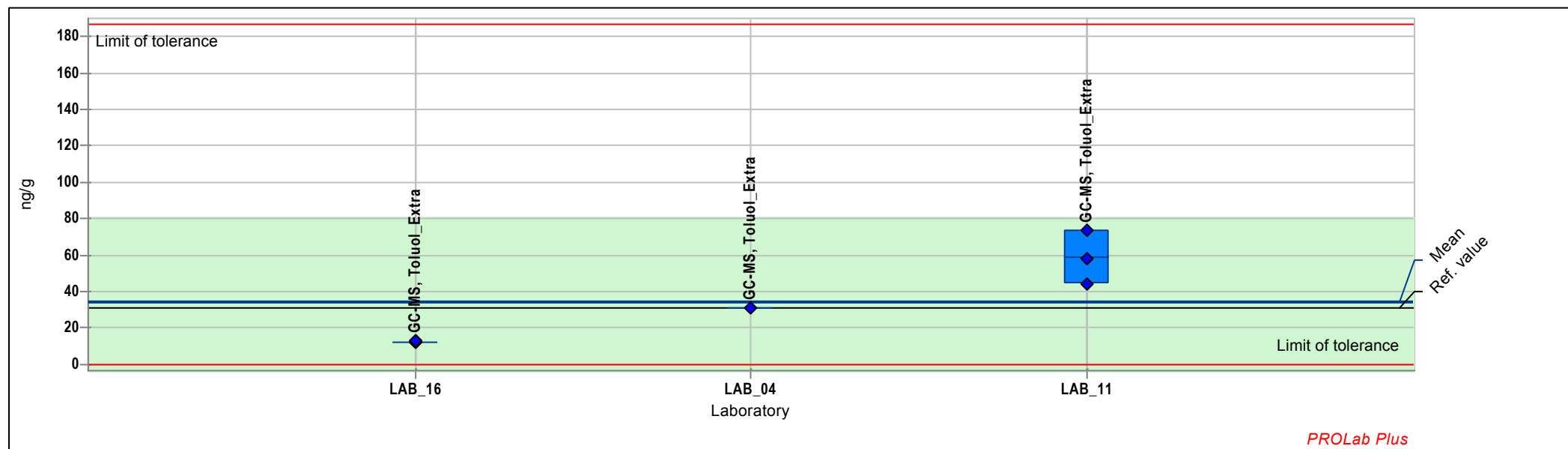


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: PAH_Chrysene
Mean ± uncertainty: 64,2 ± 62,8 ng/g
Reference value: 163,0 ng/g

Reproducibility SD: 70,4 ng/g
Rel. reproducibility SD: 109,53%
Repeatability SD: 6,0 ng/g
Rel. repeatability SD: 9,28%

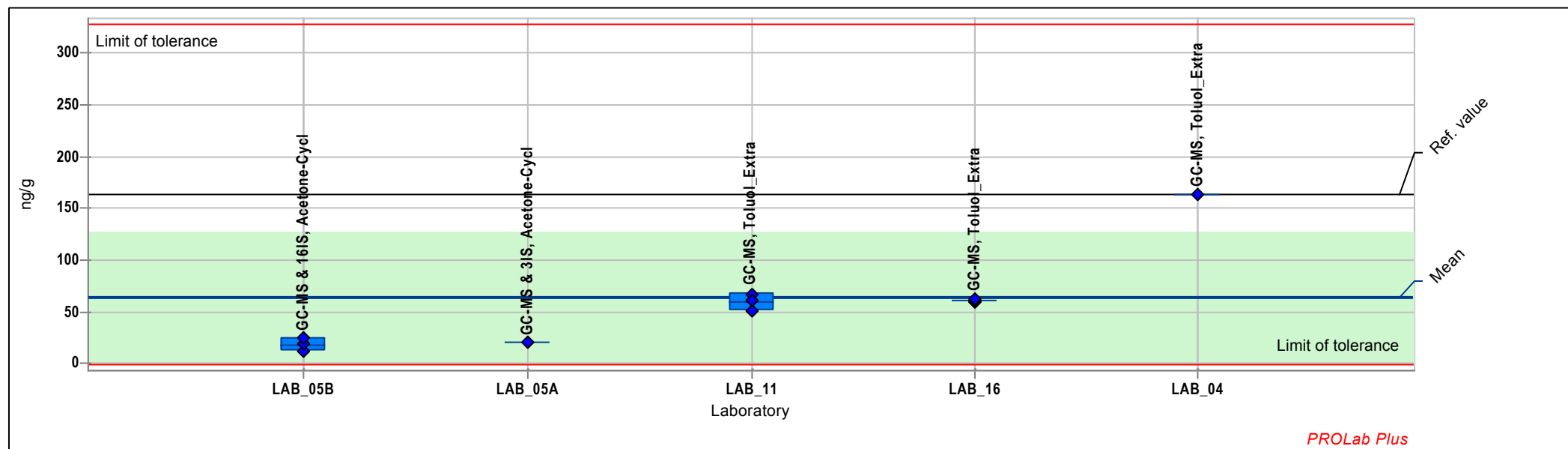


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	7,0 ng/g
Parameter:	PAH_Dibenzo[a,h]anthracene	Rel. reproducibility SD:	119,45%
Mean ± uncertainty:	5,9 ± 8,0 ng/g	Repeatability SD:	1,4 ng/g
Reference value:	7,1 ng/g	Rel. repeatability SD:	23,98%

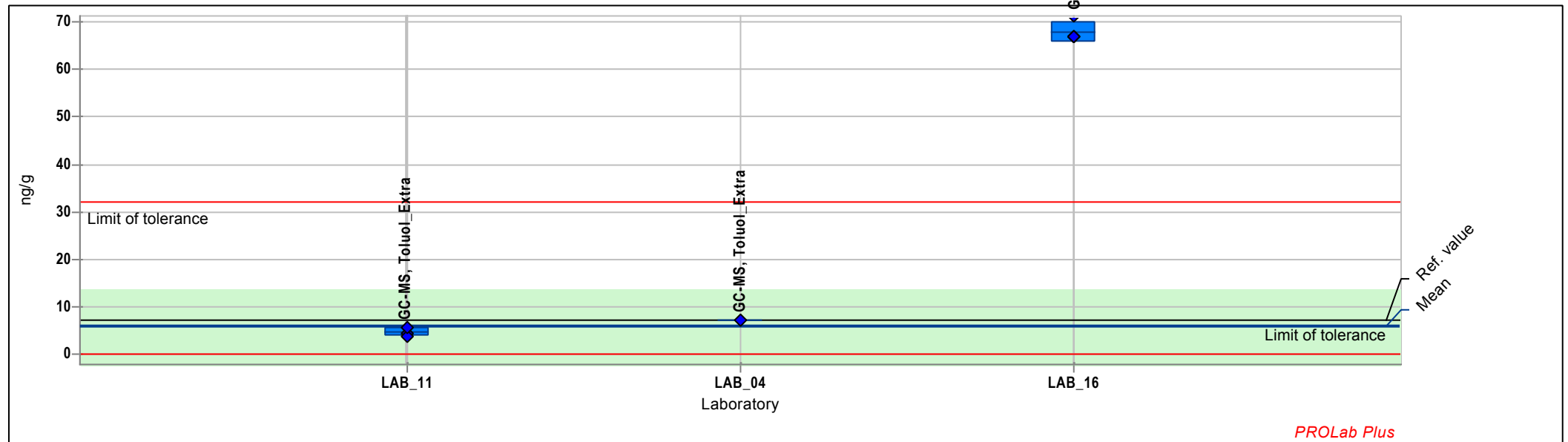


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	158,0 ng/g
Parameter:	PAH_Fluoranthene	Rel. reproducibility SD:	119,26%
Mean \pm uncertainty:	132,5 \pm 141,1 ng/g	Repeatability SD:	11,9 ng/g
Reference value:	356,0 ng/g	Rel. repeatability SD:	8,97%

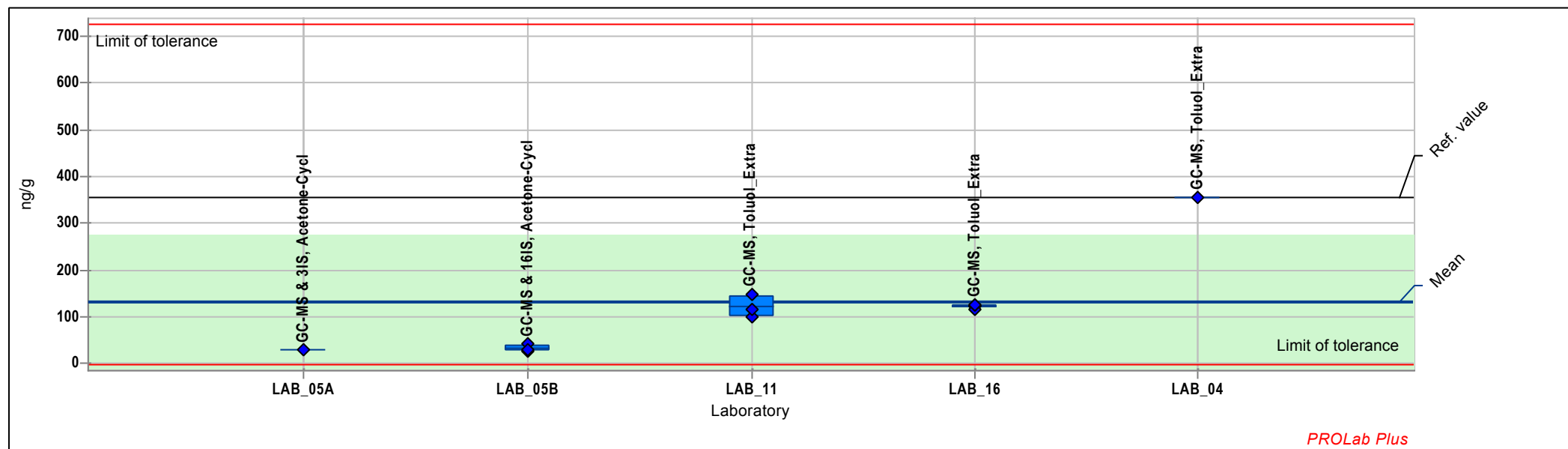


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: PAH_Fluorene
Mean ± uncertainty: 33,3 ± 27,3 ng/g
Reference value: 82,0 ng/g

Reproducibility SD: 30,6 ng/g
Rel. reproducibility SD: 91,90%
Repeatability SD: 1,1 ng/g
Rel. repeatability SD: 3,39%

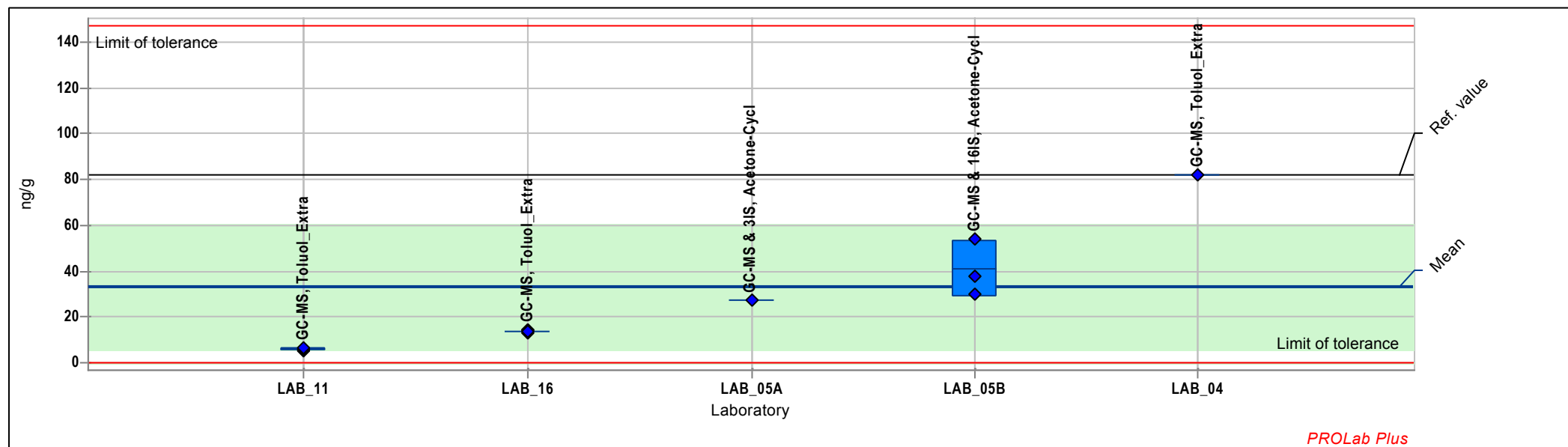


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	17,0 ng/g
Parameter:	PAH_Indeno[1,2,3-cd]pyrene	Rel. reproducibility SD:	49,68%
Mean ± uncertainty:	34,3 ± 19,5 ng/g	Repeatability SD:	3,0 ng/g
Reference value:	20,0 ng/g	Rel. repeatability SD:	8,62%

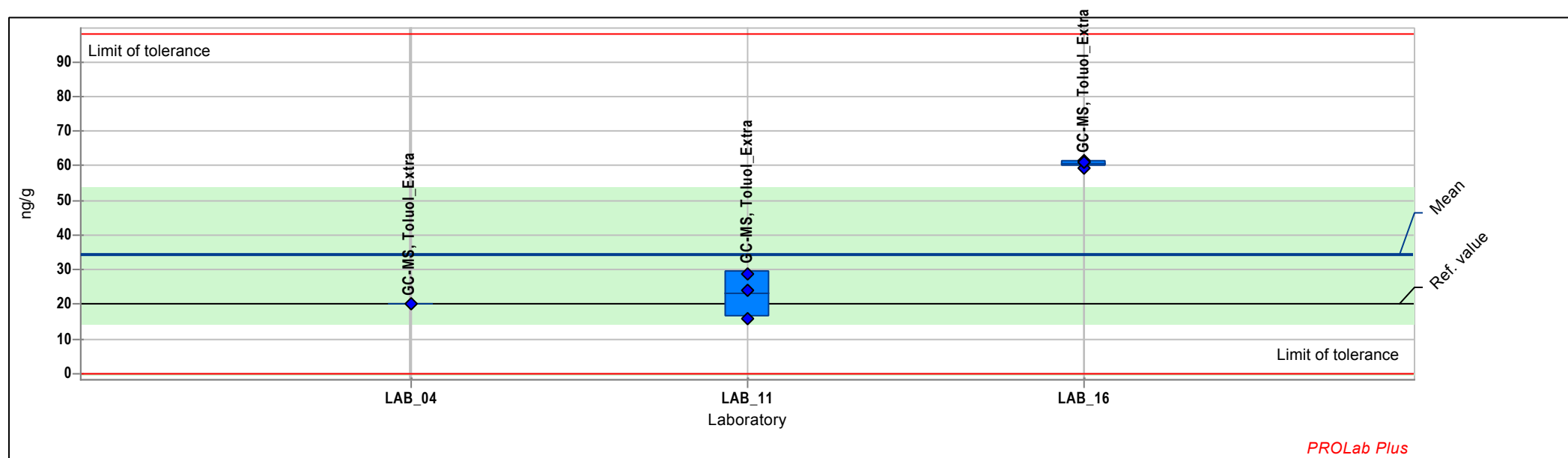


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: PAH_Naphthalene
Mean ± uncertainty: 1341 ± 777 ng/g
Reference value: 3364 ng/g

Reproducibility SD: 954 ng/g
Rel. reproducibility SD: 71,18%
Repeatability SD: 94 ng/g
Rel. repeatability SD: 7,02%

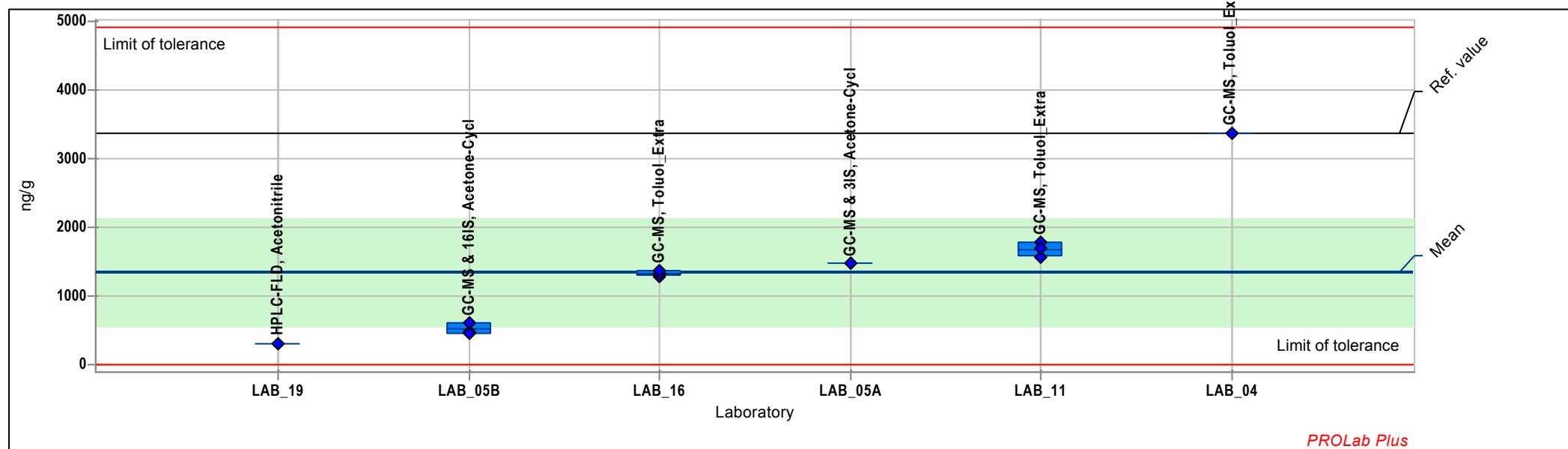


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: PAH_Phenanthrene
Mean ± uncertainty: 405,3 ± 458,1 ng/g
Reference value: 816,0 ng/g

Reproducibility SD: 514,7 ng/g
Rel. reproducibility SD: 126,99%
Repeatability SD: 72,1 ng/g
Rel. repeatability SD: 17,78%

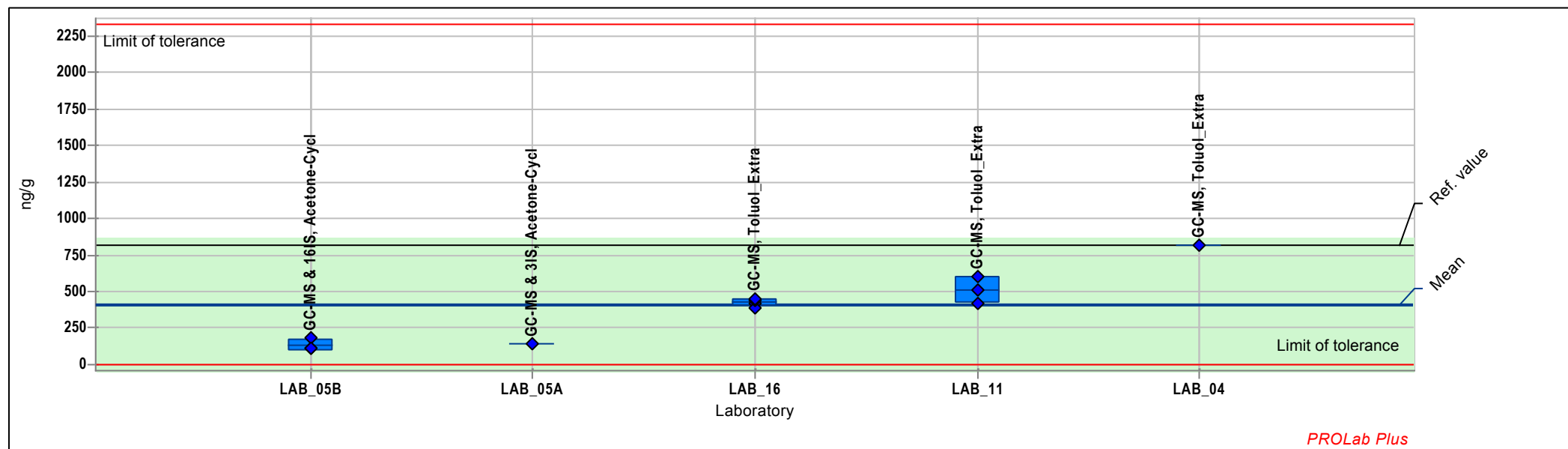


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: PAH_Pyrene
Mean \pm uncertainty: 149,0 \pm 193,4 ng/g
Reference value: 357,0 ng/g

Reproducibility SD: 216,3 ng/g
Rel. reproducibility SD: 145,21%
Repeatability SD: 7,7 ng/g
Rel. repeatability SD: 5,14%

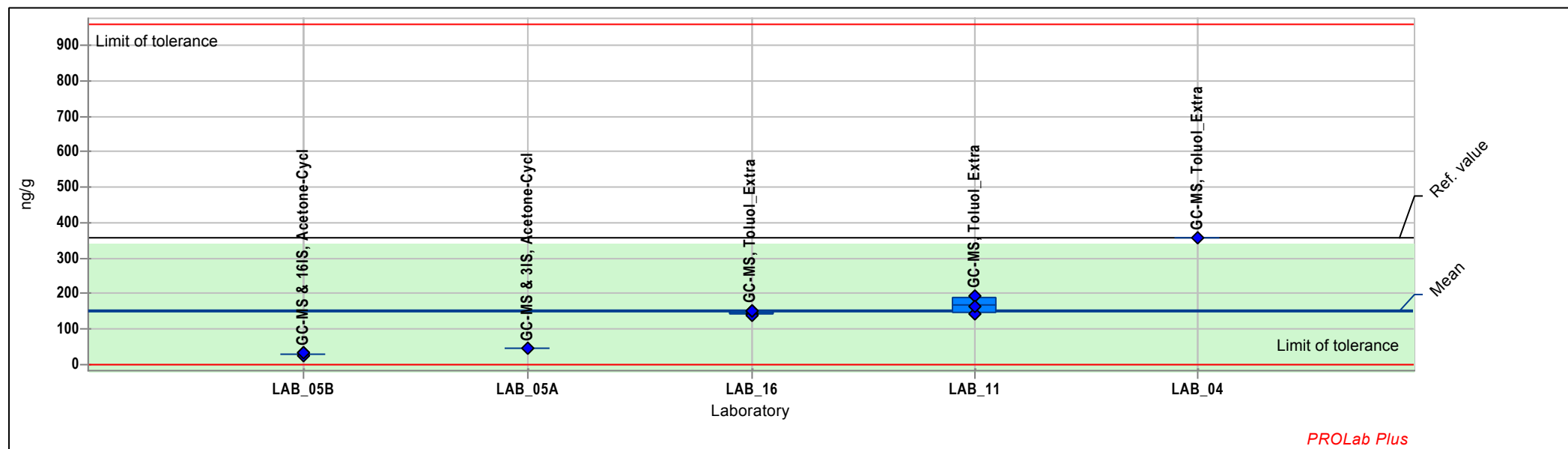


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	1,29 mg/kg
Parameter:	Pb	Rel. reproducibility SD:	65,33%
Mean ± uncertainty:	1,97 ± 0,97 mg/kg	Repeatability SD:	0,71 mg/kg
Reference value:	2,00 mg/kg	Rel. repeatability SD:	35,87%

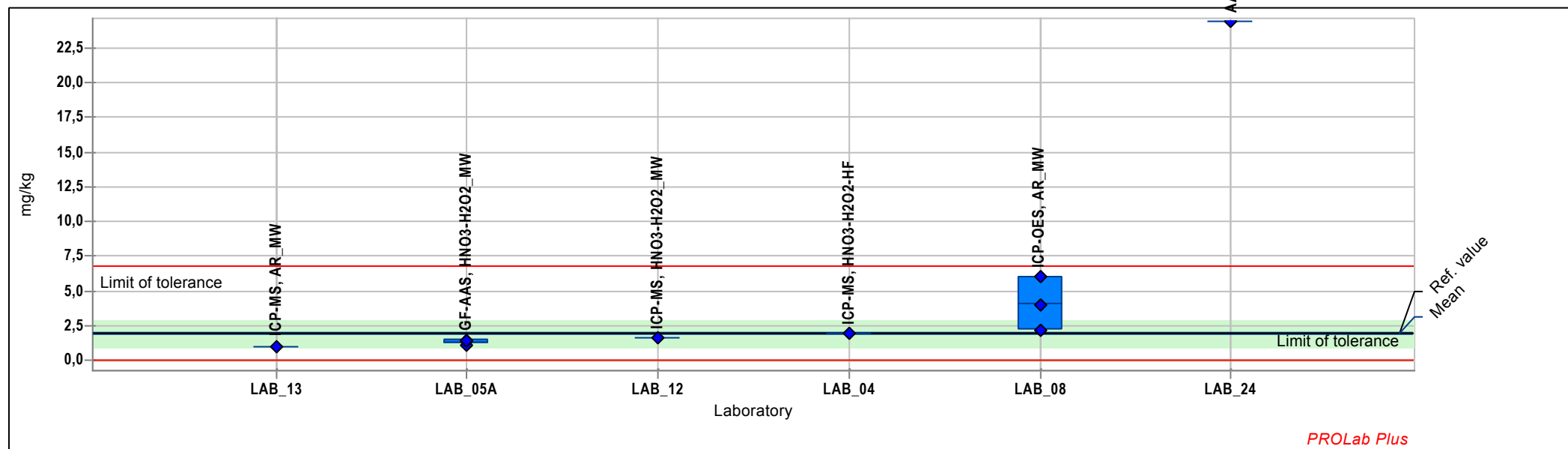


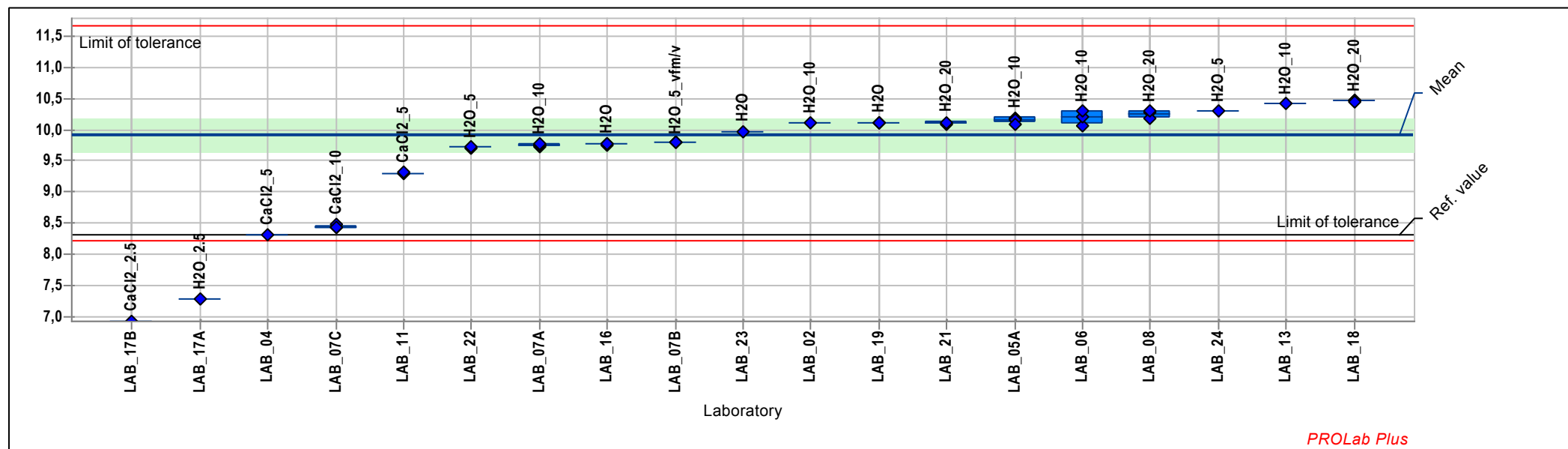
Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	0,56
Parameter:	pH	Rel. reproducibility SD:	5,68%
Mean ± uncertainty:	9,91 ± 0,26	Repeatability SD:	0,03
Reference value:	8,30	Rel. repeatability SD:	0,26%



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Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	0,067 % w/w
Parameter:	S	Rel. reproducibility SD:	160,59%
Mean ± uncertainty:	0,042 ± 0,039 % w/w	Repeatability SD:	0,067 % w/w
Reference value:		Rel. repeatability SD:	160,59%

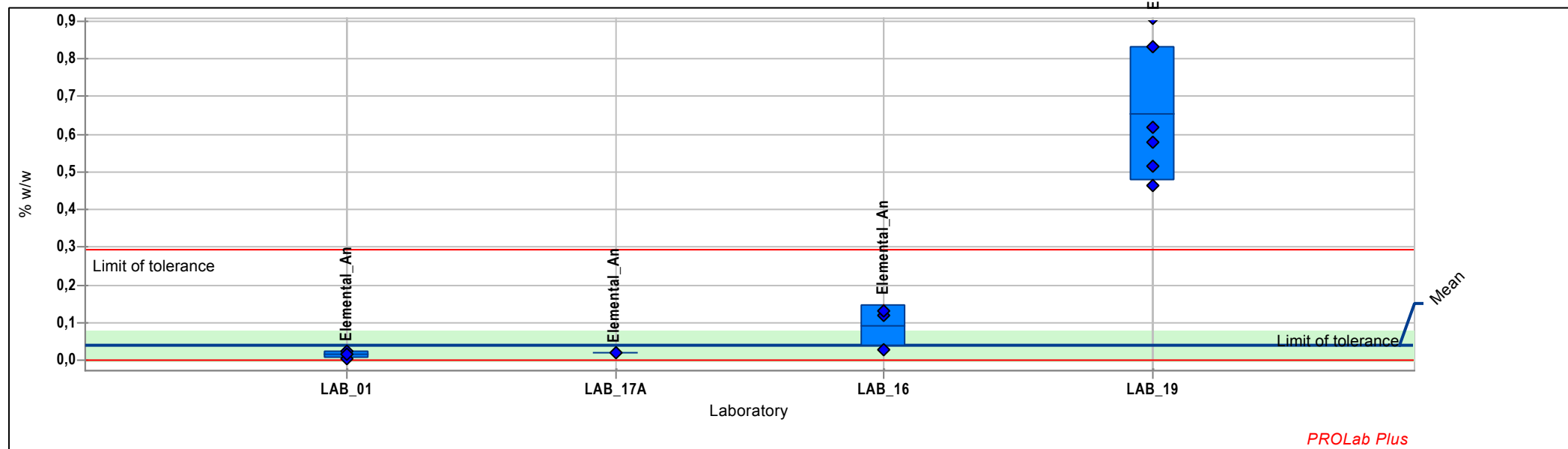


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: S_ICP-OES
Mean ± uncertainty: 0,019 ± 0,019 % w/w
Reference value: 0,022 % w/w

Reproducibility SD: 0,021 % w/w
Rel. reproducibility SD: 112,15%
Repeatability SD: 0,001 % w/w
Rel. repeatability SD: 6,87%

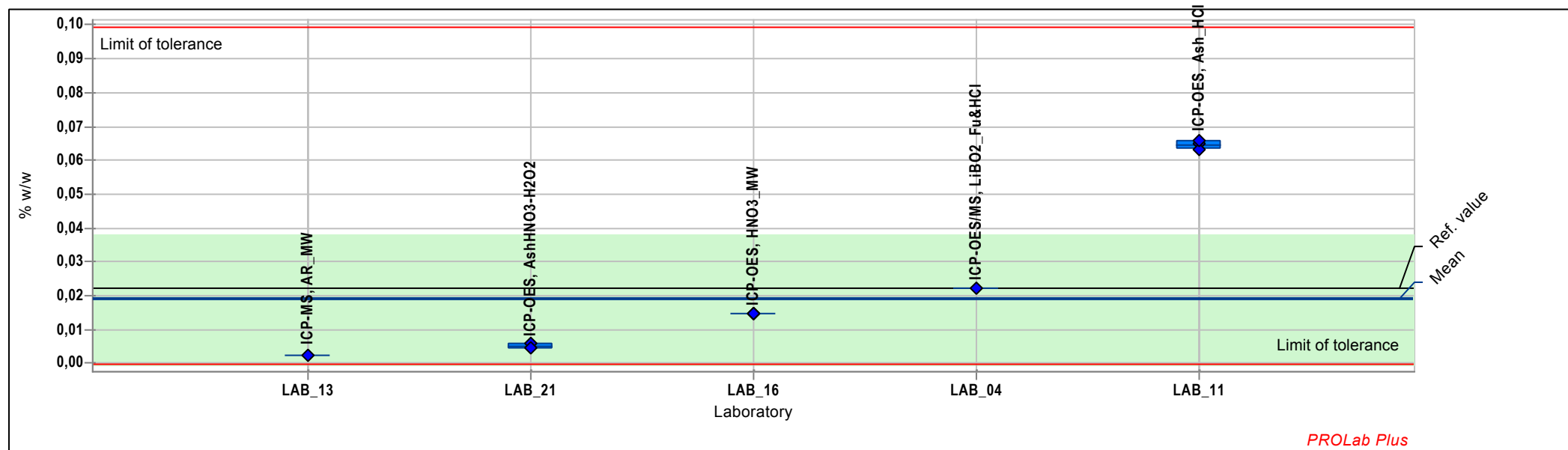


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC1
Parameter: Specific_surface_area
Mean ± uncertainty: 316,0 ± 41,2 m²/g
Reference value:
Reproducibility SD: 58,3 m²/g
Rel. reproducibility SD: 18,45%
Repeatability SD: 0,4 m²/g
Rel. repeatability SD: 0,13%

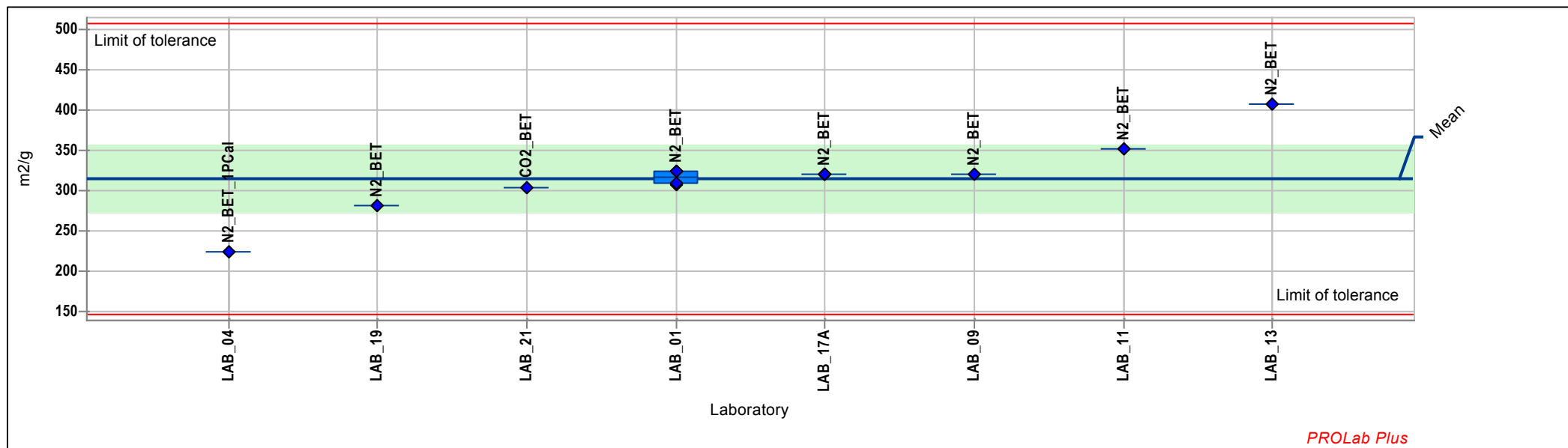


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC1	Reproducibility SD:	19,2 mg/kg
Parameter:	Zn	Rel. reproducibility SD:	44,85%
Mean ± uncertainty:	42,8 ± 12,7 mg/kg	Repeatability SD:	2,9 mg/kg
Reference value:	59,0 mg/kg	Rel. repeatability SD:	6,72%

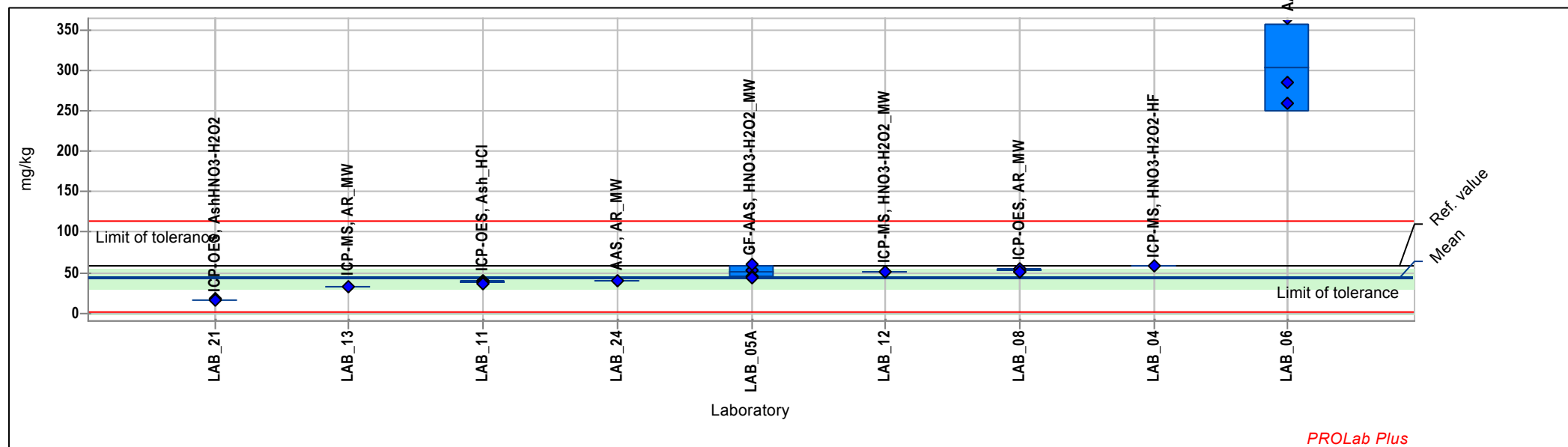


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	4,98 % w/w
Parameter:	Ash	Rel. reproducibility SD:	14,33%
Mean ± uncertainty:	34,78 ± 2,66 % w/w	Repeatability SD:	0,30 % w/w
Reference value:	40,20 % w/w	Rel. repeatability SD:	0,87%

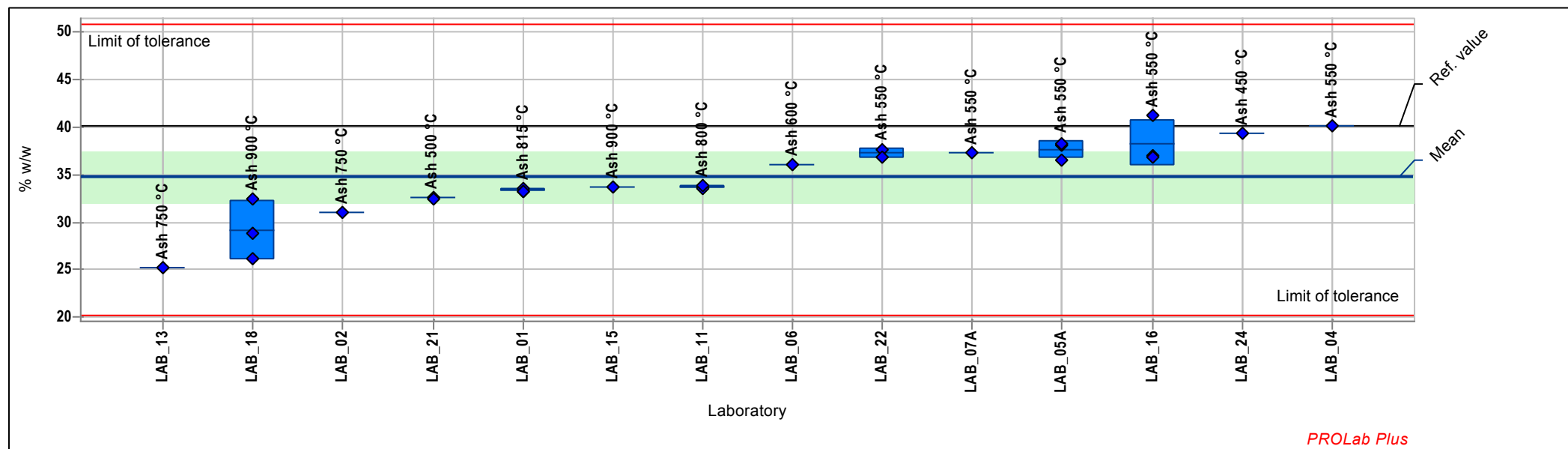


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
 Parameter: C
 Mean ± uncertainty: 51,08 ± 1,28 % w/w
 Reference value: 50,50 % w/w

Reproducibility SD: 2,60 % w/w
 Rel. reproducibility SD: 5,08%
 Repeatability SD: 1,42 % w/w
 Rel. repeatability SD: 2,78%

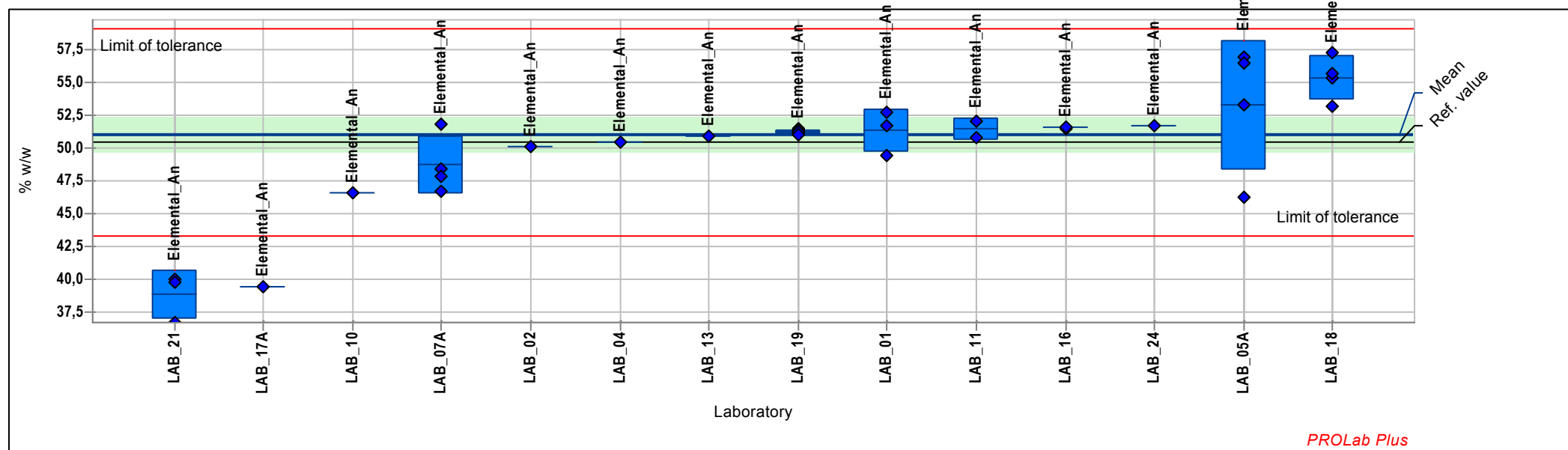


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	27741 mg/kg
Parameter:	Ca	Rel. reproducibility SD:	44,59%
Mean ± uncertainty:	62219 ± 19567 mg/kg	Repeatability SD:	2775 mg/kg
Reference value:	89200 mg/kg	Rel. repeatability SD:	4,46%

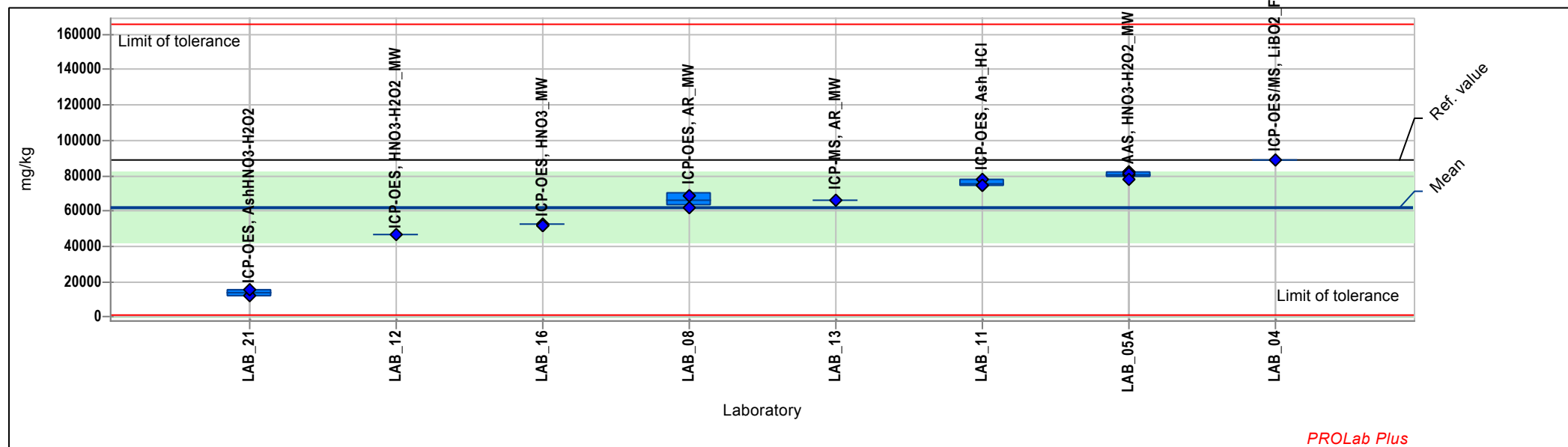


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	0,131 mg/kg
Parameter:	Cd	Rel. reproducibility SD:	77,69%
Mean ± uncertainty:	0,168 ± 0,076 mg/kg	Repeatability SD:	0,131 mg/kg
Reference value:		Rel. repeatability SD:	77,69%

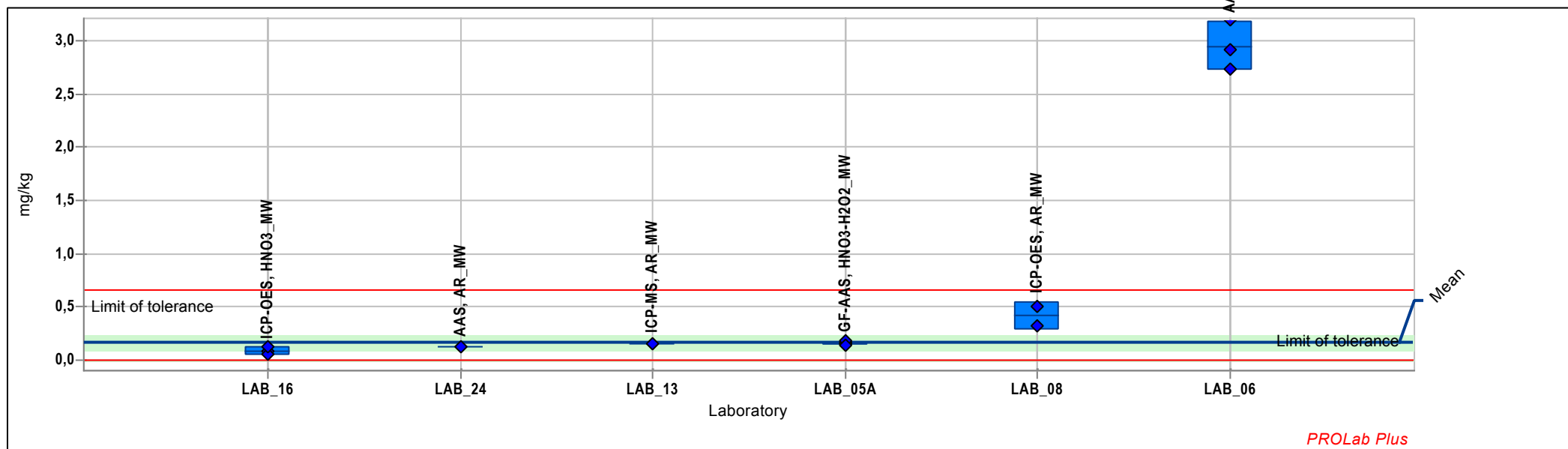


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: Cr
Mean \pm uncertainty: $8,8 \pm 5,5$ mg/kg
Reference value: 7,0 mg/kg

Reproducibility SD: 7,2 mg/kg
Rel. reproducibility SD: 82,02%
Repeatability SD: 0,8 mg/kg
Rel. repeatability SD: 8,52%

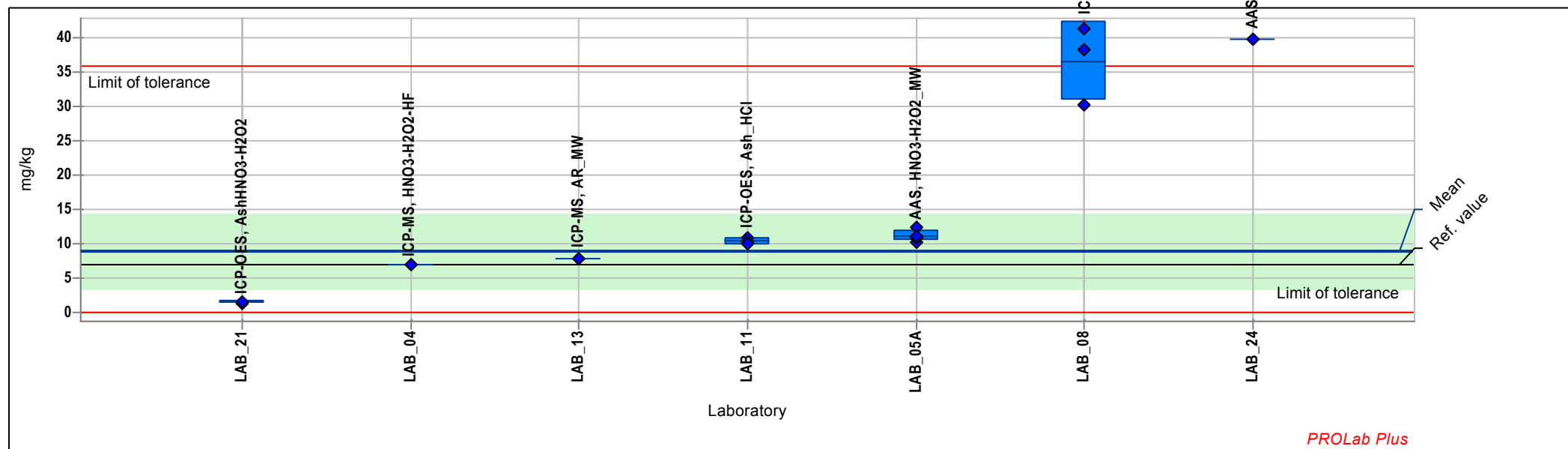


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: Cu
Mean ± uncertainty: 28,7 ± 7,4 mg/kg
Reference value: 41,0 mg/kg
Reproducibility SD: 11,7 mg/kg
Rel. reproducibility SD: 40,95%
Repeatability SD: 1,2 mg/kg
Rel. repeatability SD: 4,20%

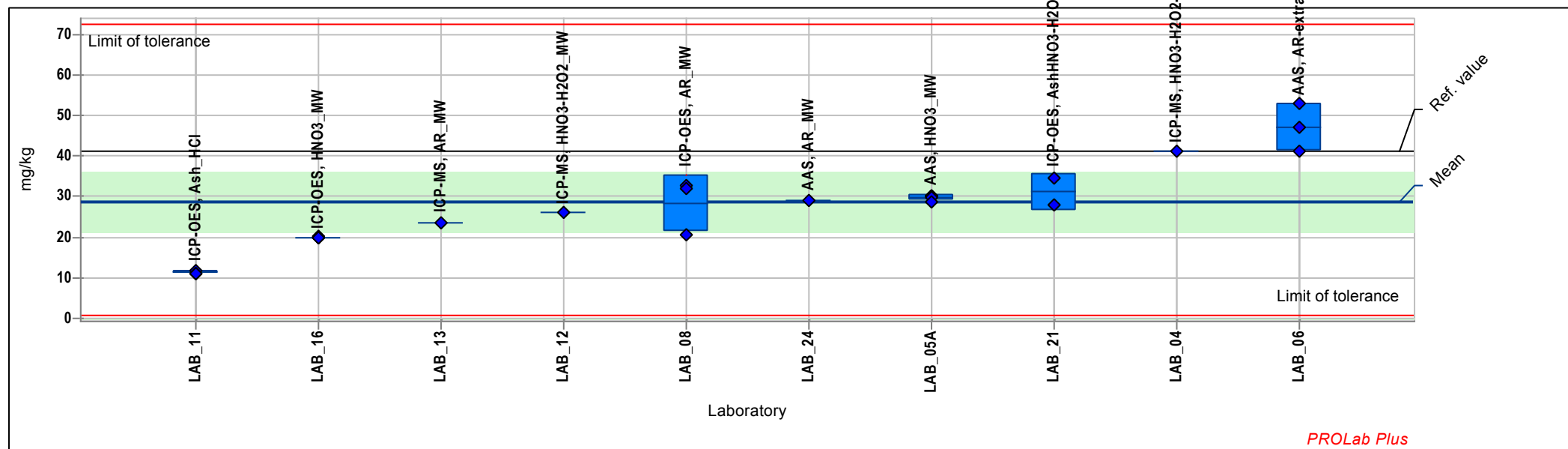


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: EC
Mean \pm uncertainty: 1054 \pm 408 uS/cm
Reference value: 759 uS/cm

Reproducibility SD: 736 uS/cm
Rel. reproducibility SD: 69,87%
Repeatability SD: 16 uS/cm
Rel. repeatability SD: 1,54%

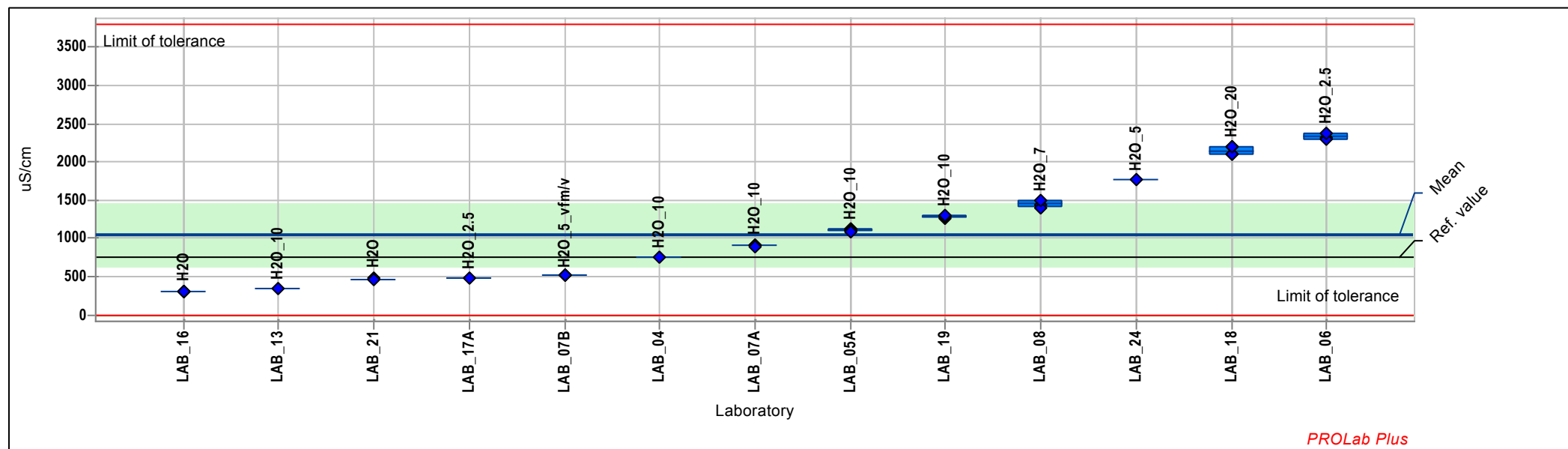


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	670 mg/kg
Parameter:	Fe	Rel. reproducibility SD:	43,19%
Mean ± uncertainty:	1550 ± 472 mg/kg	Repeatability SD:	66 mg/kg
Reference value:	2780 mg/kg	Rel. repeatability SD:	4,28%

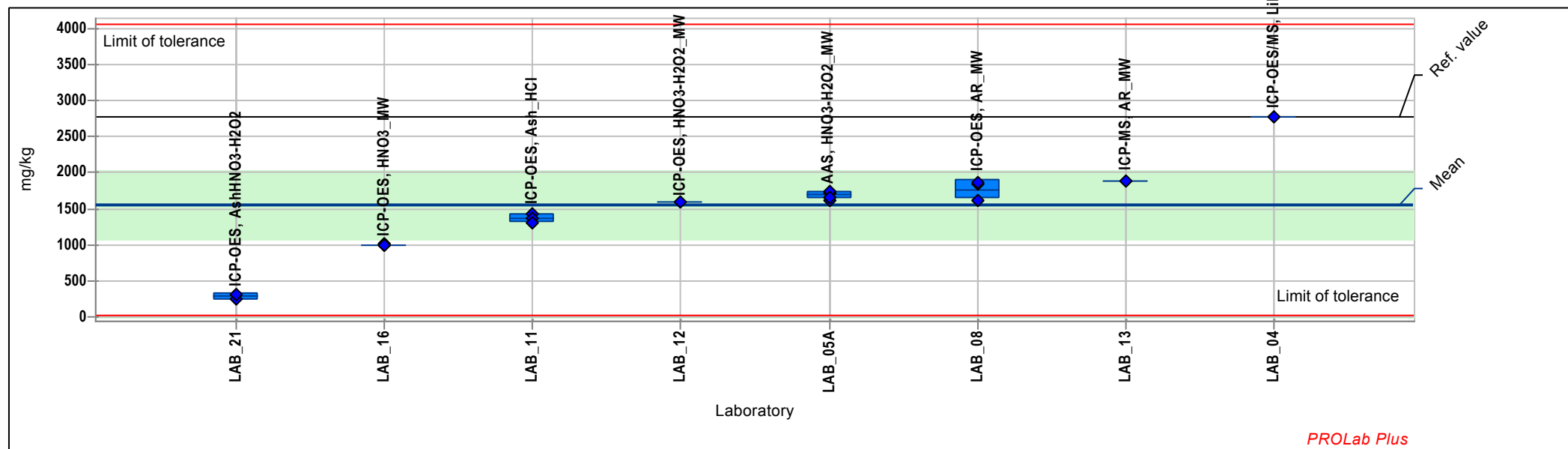


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	0,31 % w/w
Parameter:	H	Rel. reproducibility SD:	17,70%
Mean ± uncertainty:	1,73 ± 0,19 % w/w	Repeatability SD:	0,05 % w/w
Reference value:	1,55 % w/w	Rel. repeatability SD:	2,76%

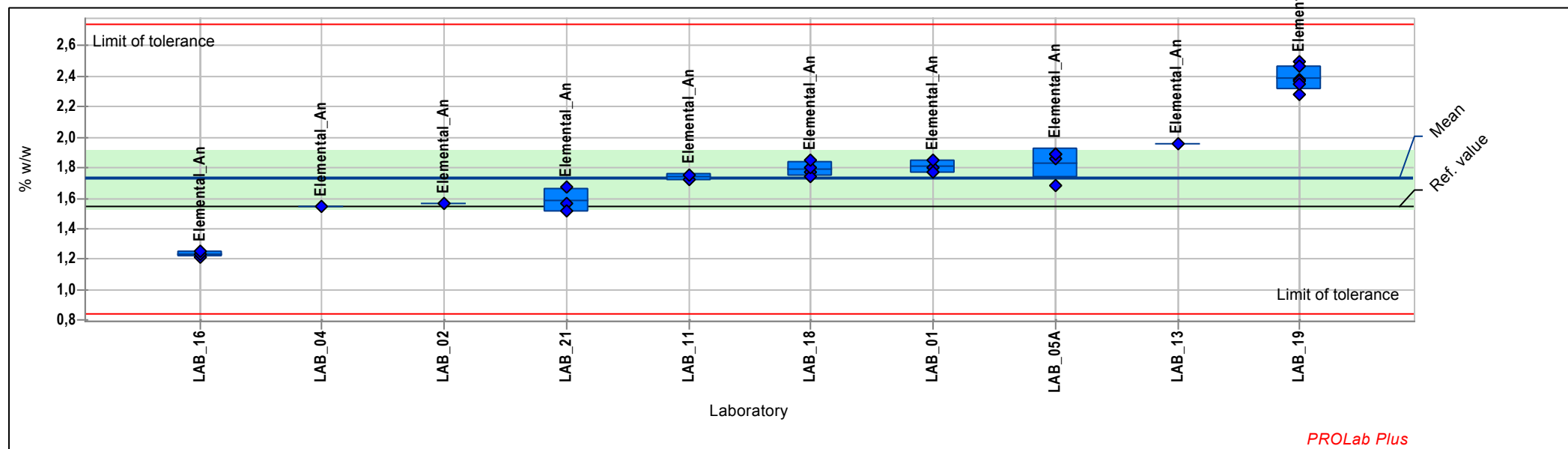


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	6869 mg/kg
Parameter:	K	Rel. reproducibility SD:	68,58%
Mean ± uncertainty:	10016 ± 4856 mg/kg	Repeatability SD:	183 mg/kg
Reference value:	16800 mg/kg	Rel. repeatability SD:	1,82%

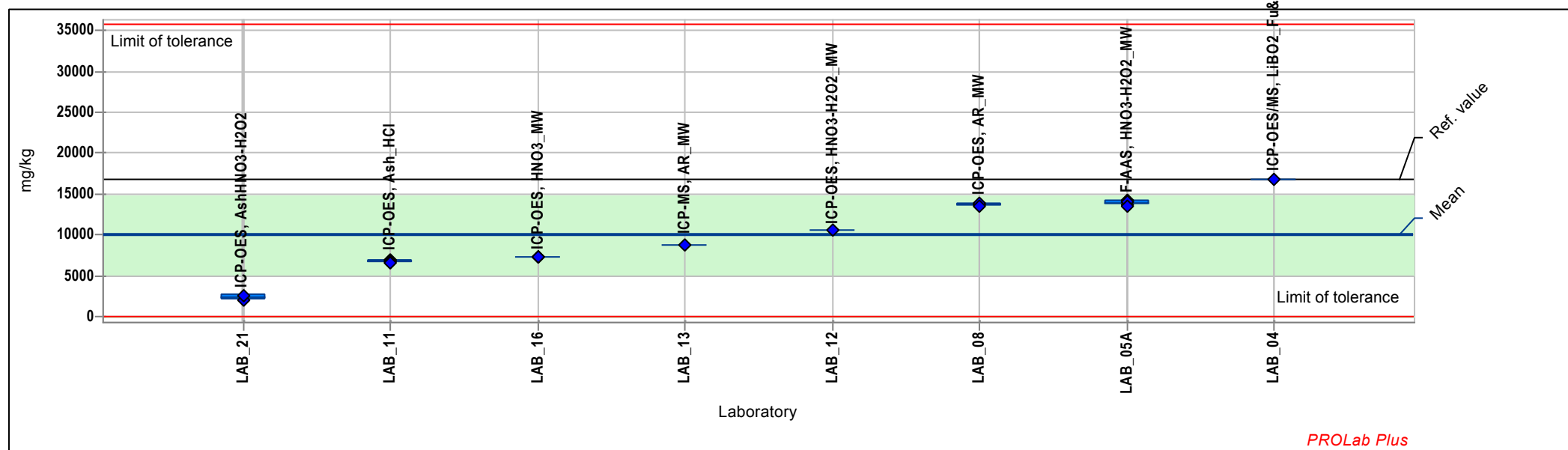


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: Mg
Mean ± uncertainty: 3234 ± 430 mg/kg
Reference value: 4530 mg/kg
Reproducibility SD: 614 mg/kg
Rel. reproducibility SD: 18,99%
Repeatability SD: 124 mg/kg
Rel. repeatability SD: 3,82%

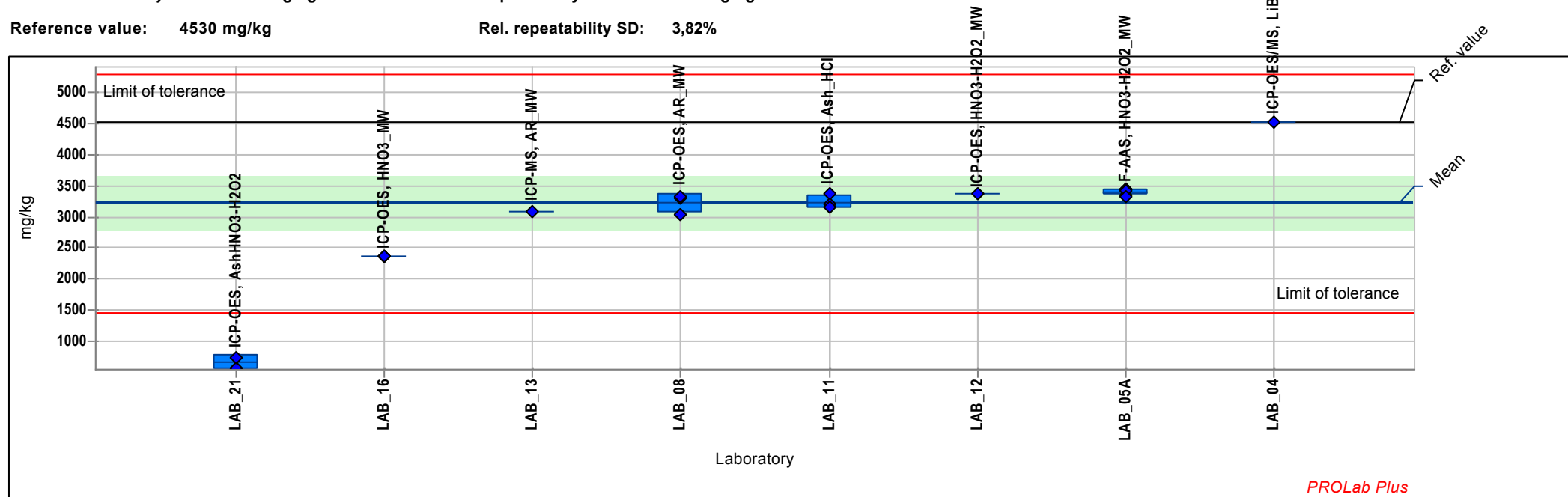


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Box plot of the laboratory results



Sample: BC2
Parameter: Mn
Mean ± uncertainty: 127 ± 31 mg/kg
Reference value:
Reproducibility SD: 41 mg/kg
Rel. reproducibility SD: 32,17%
Repeatability SD: 5 mg/kg
Rel. repeatability SD: 3,68%

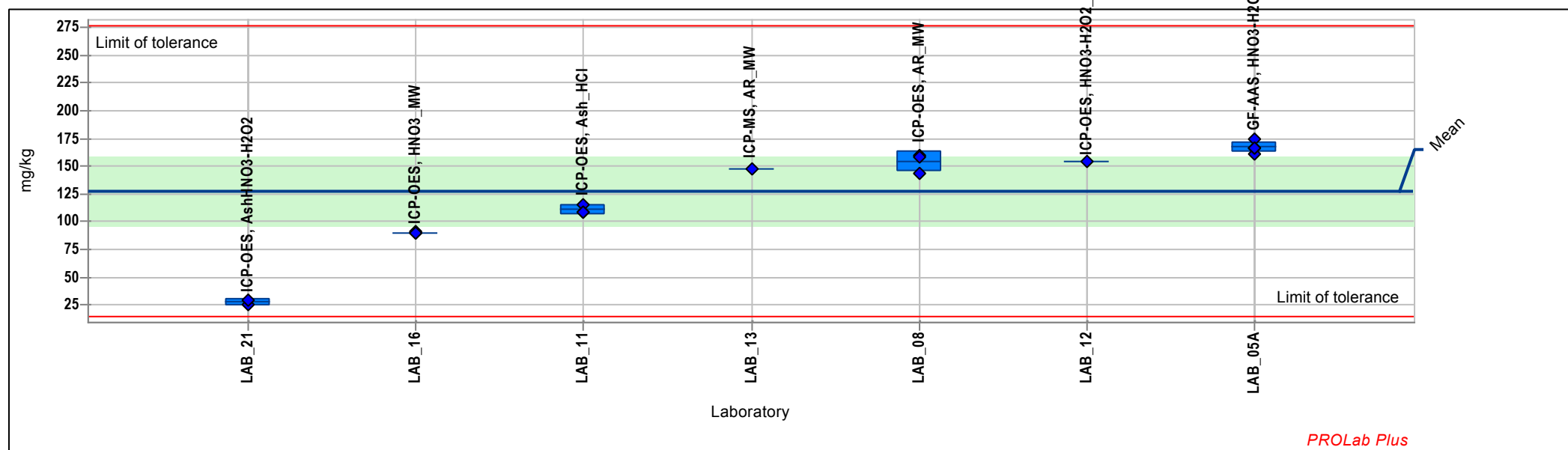


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: N
Mean ± uncertainty: 1,39 ± 0,11 % w/w
Reference value: 1,29 % w/w
Reproducibility SD: 0,20 % w/w
Rel. reproducibility SD: 14,59%
Repeatability SD: 0,03 % w/w
Rel. repeatability SD: 2,09%

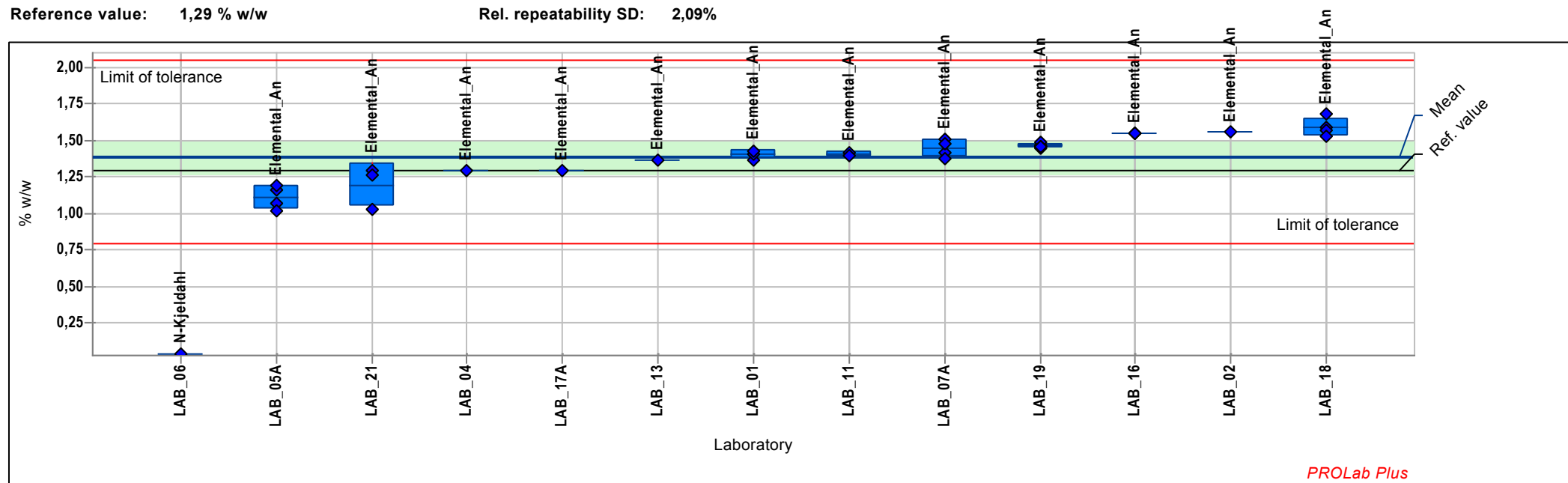


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	102 mg/kg
Parameter:	Na	Rel. reproducibility SD:	32,98%
Mean ± uncertainty:	308 ± 72 mg/kg	Repeatability SD:	11 mg/kg
Reference value:	910 mg/kg	Rel. repeatability SD:	3,41%

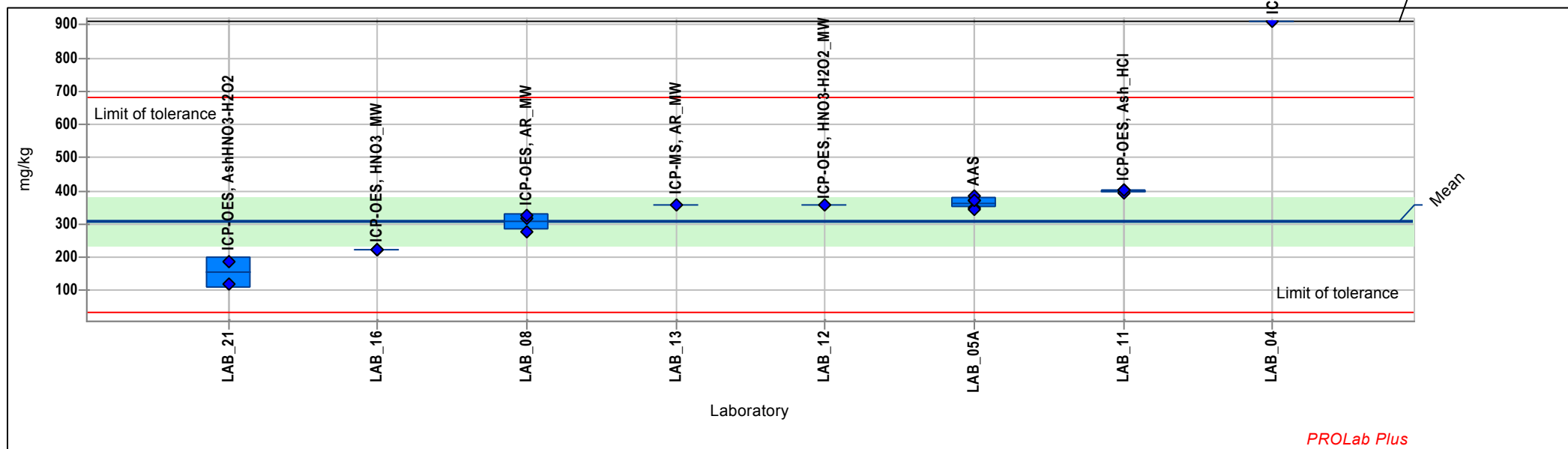


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	3,3 mg/kg
Parameter:	Ni	Rel. reproducibility SD:	44,97%
Mean ± uncertainty:	7,4 ± 2,2 mg/kg	Repeatability SD:	1,7 mg/kg
Reference value:	9,0 mg/kg	Rel. repeatability SD:	23,09%

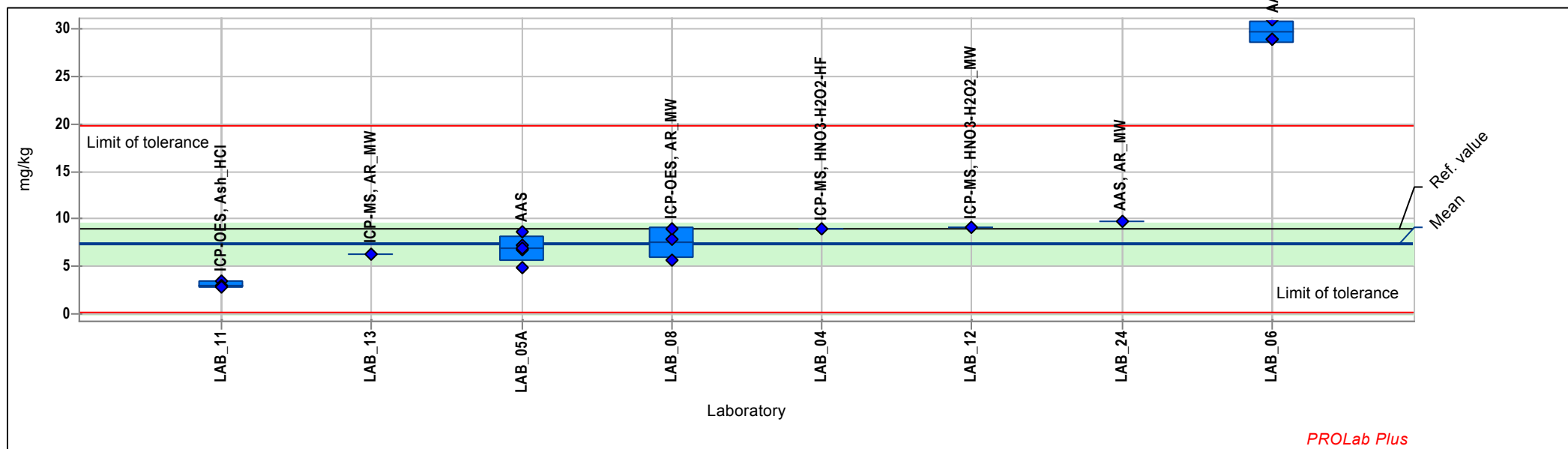


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	8,64 % w/w
Parameter:	O	Rel. reproducibility SD:	71,52%
Mean ± uncertainty:	12,08 ± 8,60 % w/w	Repeatability SD:	1,19 % w/w
Reference value:	6,40 % w/w	Rel. repeatability SD:	9,86%

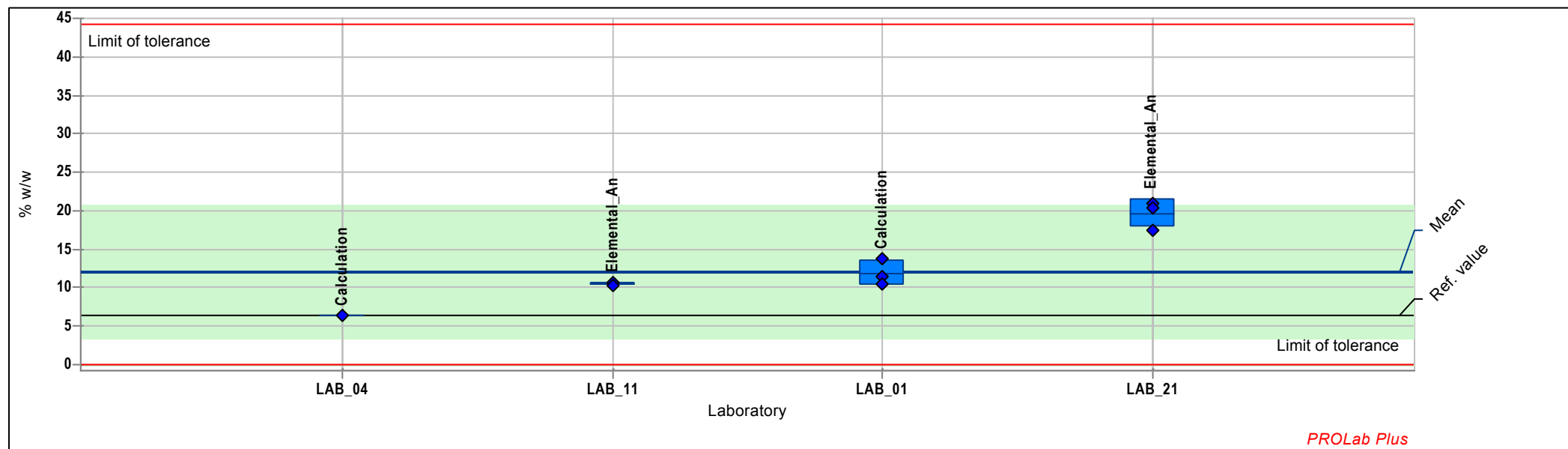


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: P
Mean \pm uncertainty: 6054 \pm 937 mg/kg
Reference value: 6610 mg/kg

Reproducibility SD: 1049 mg/kg
Rel. reproducibility SD: 17,32%
Repeatability SD: 59 mg/kg
Rel. repeatability SD: 0,98%

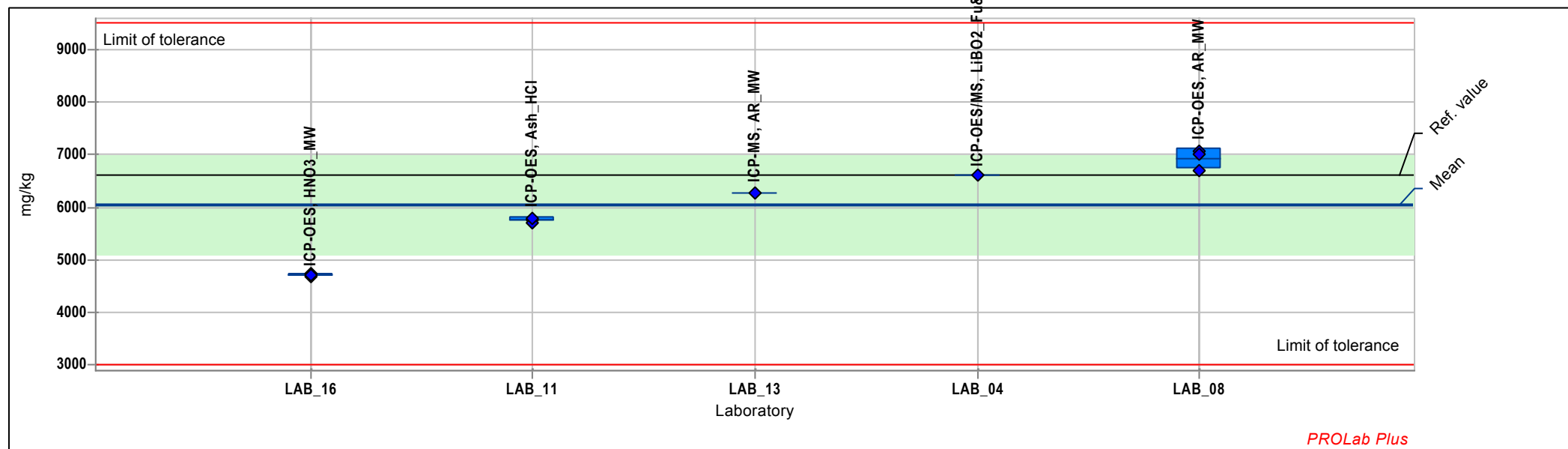


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: PAH_Sum
Mean ± uncertainty: 2252,0 ± 1155,1 ng/g
Reference value: 3553,0 ng/g

Reproducibility SD: 1296,8 ng/g
Rel. reproducibility SD: 57,58%
Repeatability SD: 144,1 ng/g
Rel. repeatability SD: 6,40%

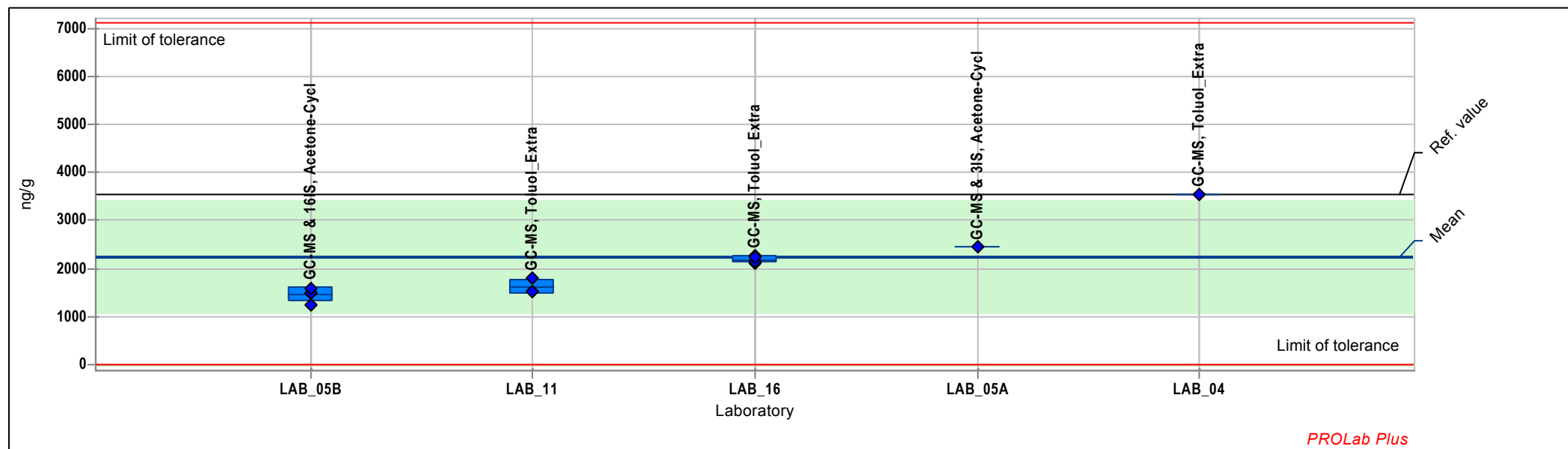


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: PAH_Acenaphthene
Mean ± uncertainty: 23,7 ± 30,7 ng/g
Reference value: 41,0 ng/g

Reproducibility SD: 34,4 ng/g
Rel. reproducibility SD: 145,28%
Repeatability SD: 1,1 ng/g
Rel. repeatability SD: 4,69%

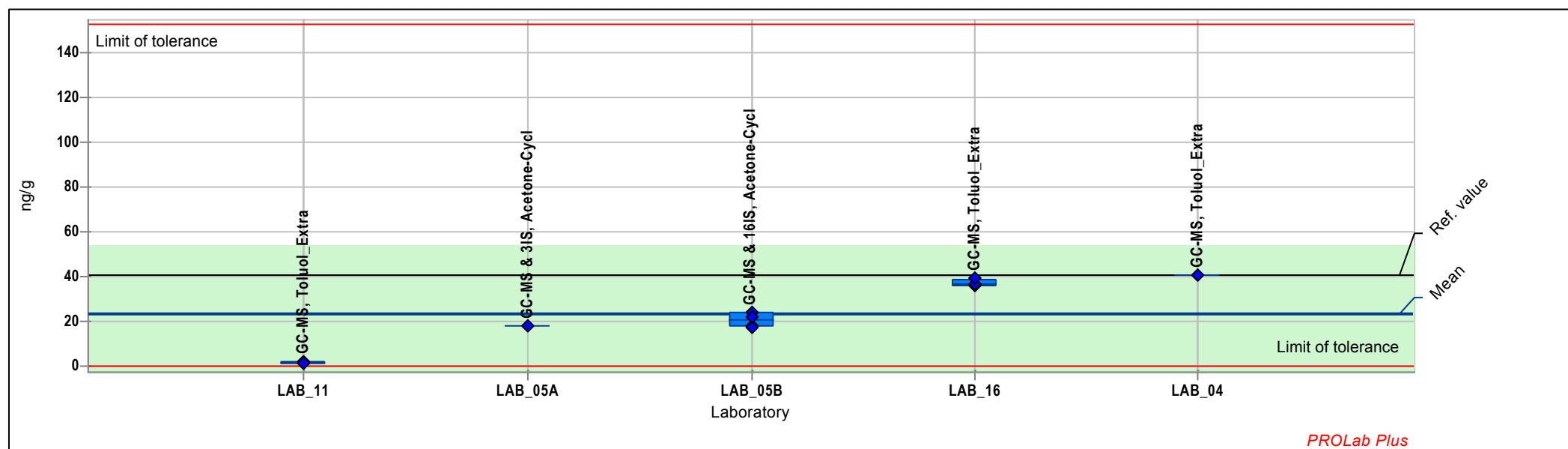


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	38,4 ng/g
Parameter:	PAH_Acenaphthylene	Rel. reproducibility SD:	75,53%
Mean ± uncertainty:	50,8 ± 34,3 ng/g	Repeatability SD:	1,0 ng/g
Reference value:	10,0 ng/g	Rel. repeatability SD:	2,06%

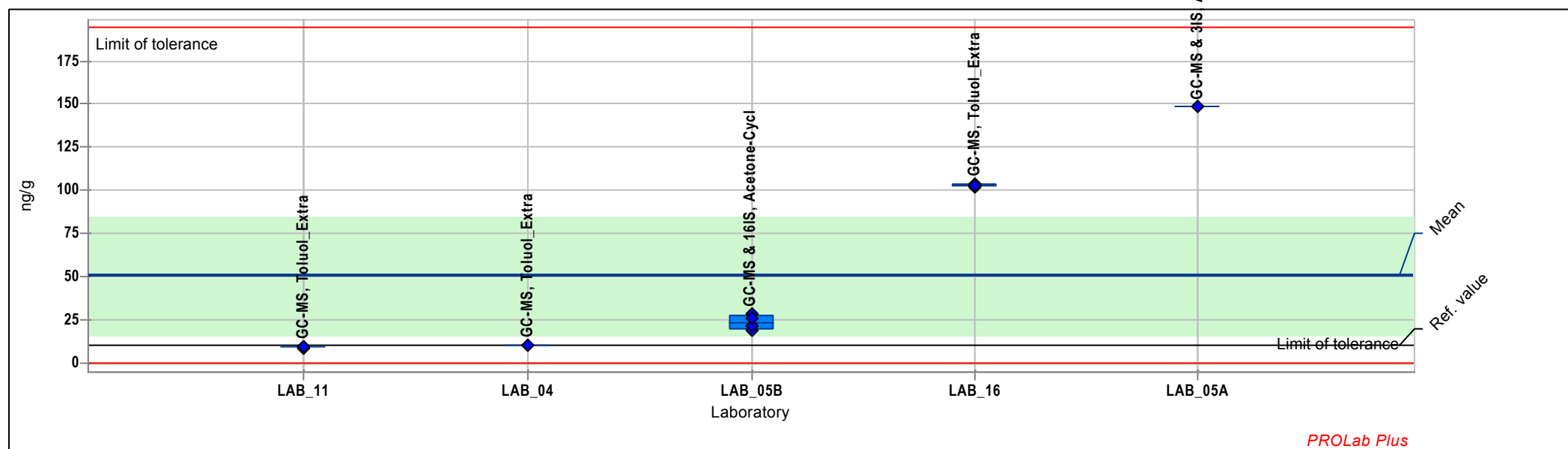


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: PAH_Anthracene
Mean ± uncertainty: 64,7 ± 61,4 ng/g
Reference value: 184,0 ng/g

Reproducibility SD: 68,9 ng/g
Rel. reproducibility SD: 106,35%
Repeatability SD: 6,4 ng/g
Rel. repeatability SD: 9,82%

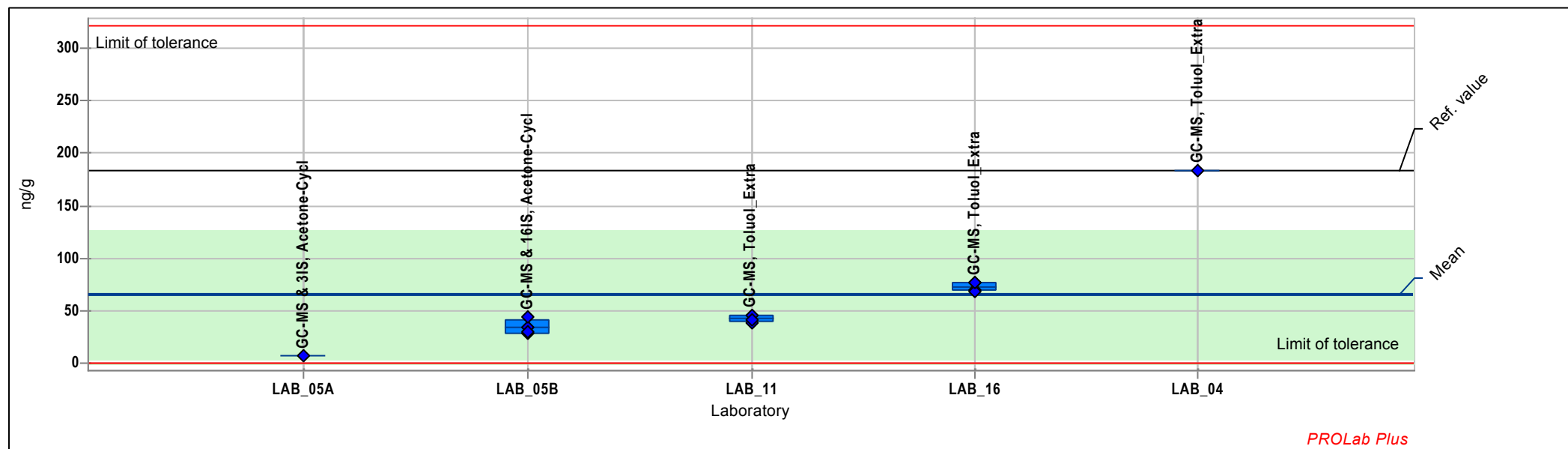


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: PAH_Benzo[a]anthracene
Mean ± uncertainty: 71,3 ± 58,6 ng/g
Reference value: 164,0 ng/g

Reproducibility SD: 65,7 ng/g
Rel. reproducibility SD: 92,21%
Repeatability SD: 5,6 ng/g
Rel. repeatability SD: 7,82%

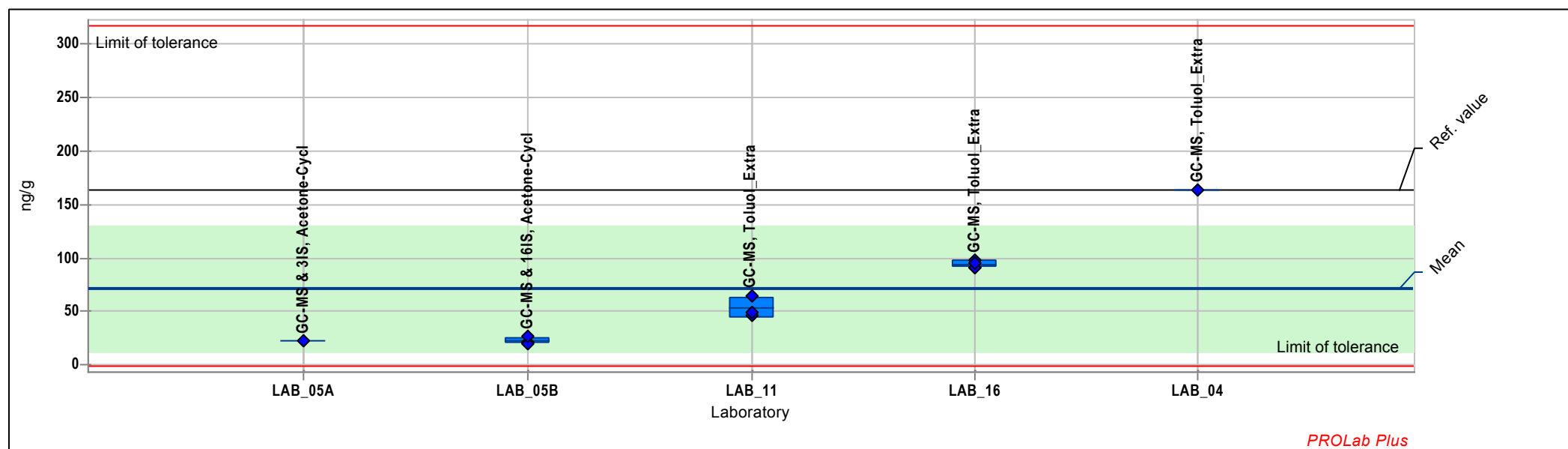


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: PAH_Benzo[a]pyrene
Mean \pm uncertainty: 58,2 \pm 45,6 ng/g
Reference value: 113,0 ng/g

Reproducibility SD: 51,3 ng/g
Rel. reproducibility SD: 88,12%
Repeatability SD: 5,7 ng/g
Rel. repeatability SD: 9,88%

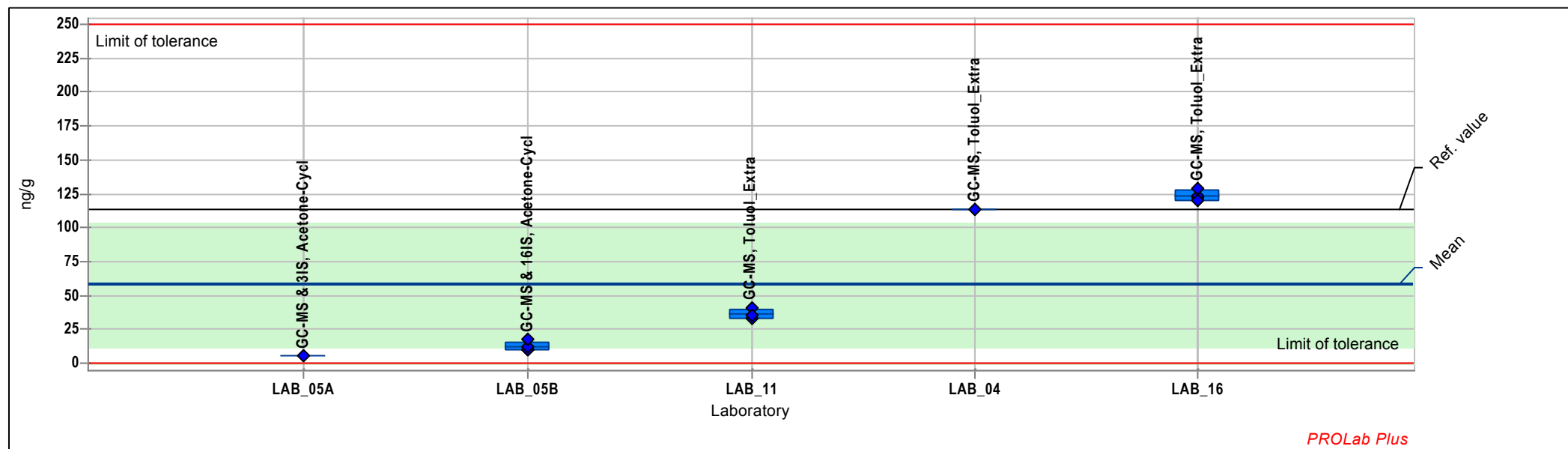


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: PAH_Benzo[b]fluoranthene
Mean ± uncertainty: 50,7 ± 22,0 ng/g
Reference value: 103,0 ng/g

Reproducibility SD: 25,1 ng/g
Rel. reproducibility SD: 49,36%
Repeatability SD: 5,9 ng/g
Rel. repeatability SD: 11,70%

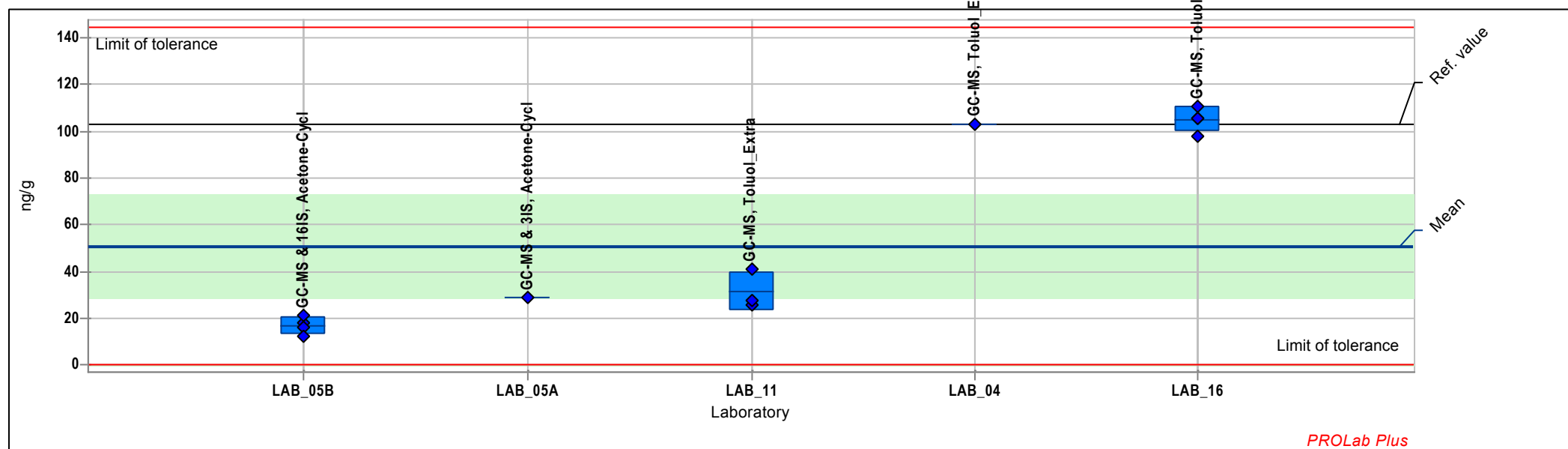


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	4,7 ng/g
Parameter:	PAH_Benzo[k]fluoranthene	Rel. reproducibility SD:	35,72%
Mean ± uncertainty:	13,2 ± 4,2 ng/g	Repeatability SD:	0,9 ng/g
Reference value:	62,0 ng/g	Rel. repeatability SD:	6,91%

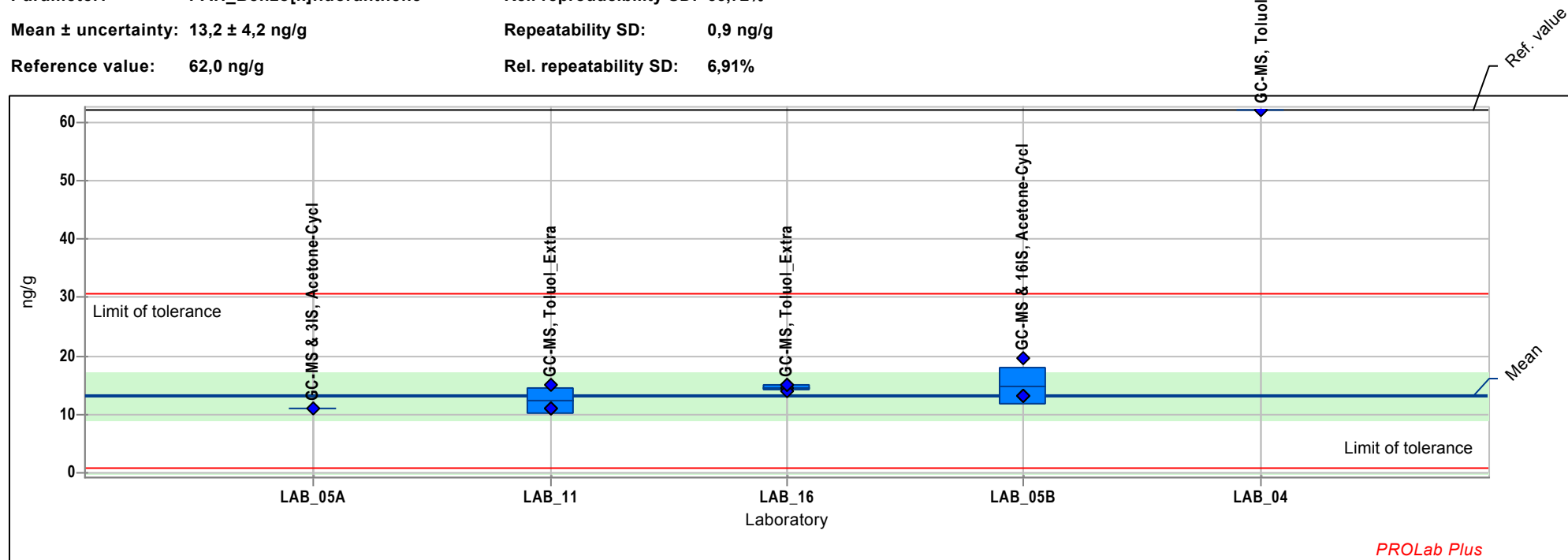


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	17,9 ng/g
Parameter:	PAH_Benzo[ghi]perylene	Rel. reproducibility SD:	76,08%
Mean ± uncertainty:	23,5 ± 15,9 ng/g	Repeatability SD:	2,5 ng/g
Reference value:	51,0 ng/g	Rel. repeatability SD:	10,61%

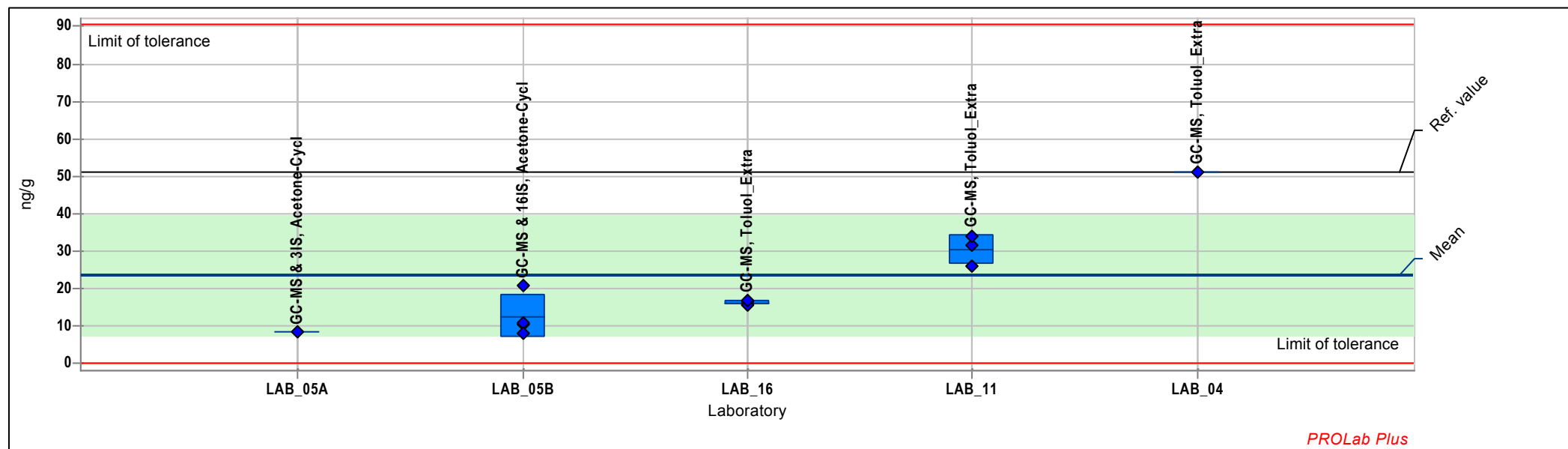


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	95,1 ng/g
Parameter:	PAH_Chrysene	Rel. reproducibility SD:	112,92%
Mean ± uncertainty:	84,2 ± 84,8 ng/g	Repeatability SD:	8,4 ng/g
Reference value:	215,0 ng/g	Rel. repeatability SD:	10,00%

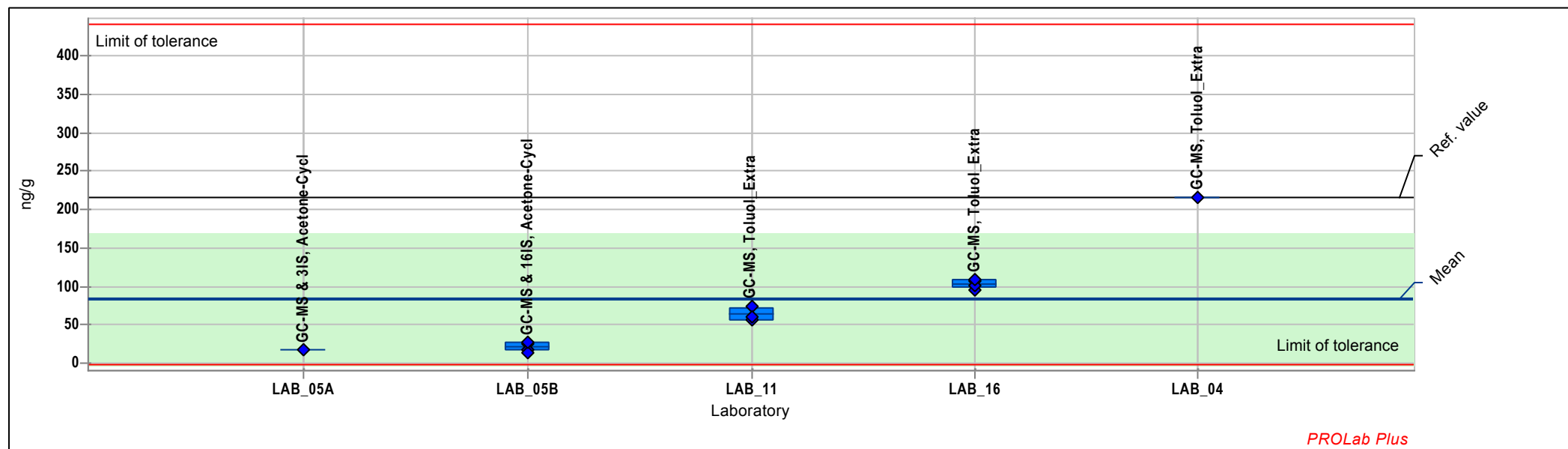


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	10,9 ng/g
Parameter:	PAH_Dibenzo[a,h]anthracene	Rel. reproducibility SD:	190,97%
Mean ± uncertainty:	5,7 ± 10,8 ng/g	Repeatability SD:	2,0 ng/g
Reference value:	10,0 ng/g	Rel. repeatability SD:	35,76%

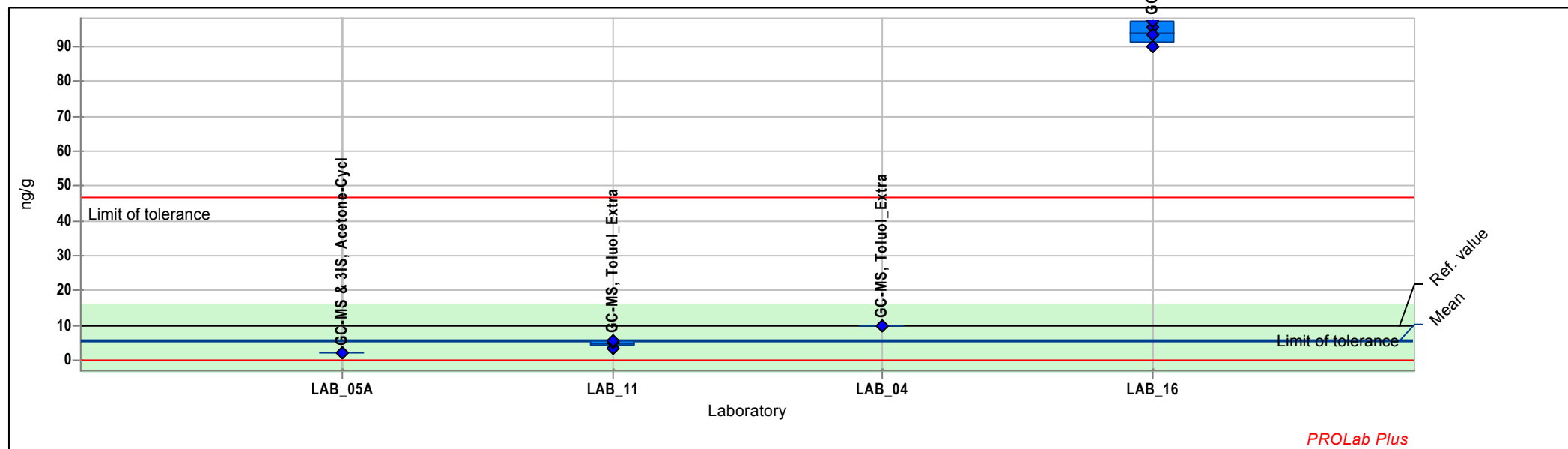


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: PAH_Fluoranthene
Mean \pm uncertainty: 108,6 \pm 71,5 ng/g
Reference value: 328,0 ng/g

Reproducibility SD: 87,8 ng/g
Rel. reproducibility SD: 80,87%
Repeatability SD: 9,6 ng/g
Rel. repeatability SD: 8,85%

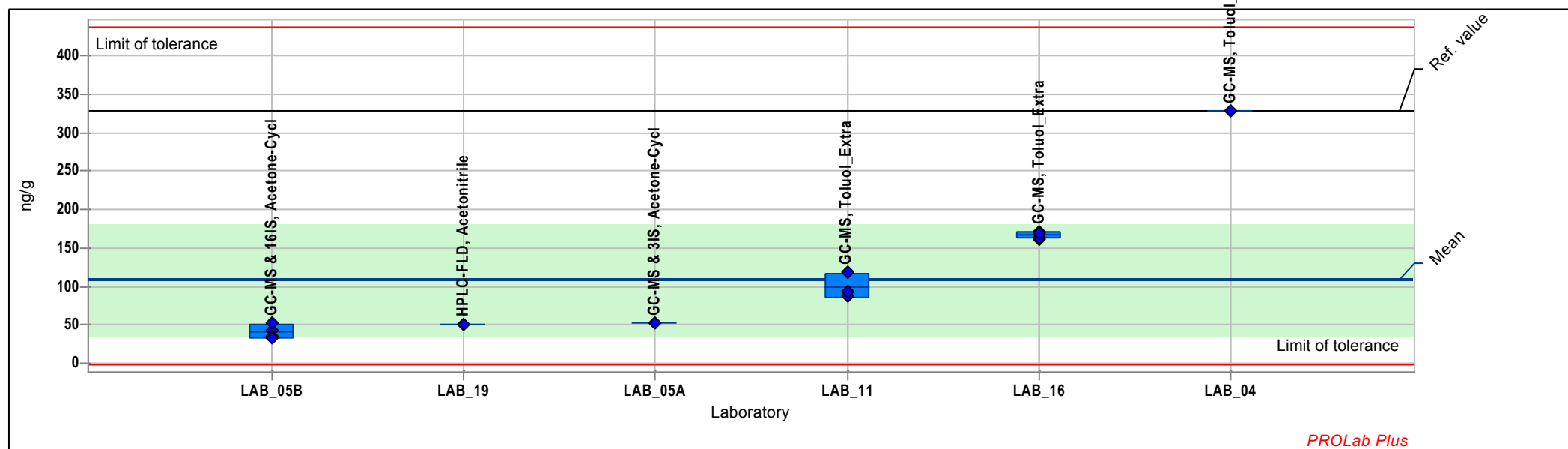


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	21,7 ng/g
Parameter:	PAH_Fluorene	Rel. reproducibility SD:	78,74%
Mean ± uncertainty:	27,6 ± 19,4 ng/g	Repeatability SD:	1,2 ng/g
Reference value:	62,0 ng/g	Rel. repeatability SD:	4,50%

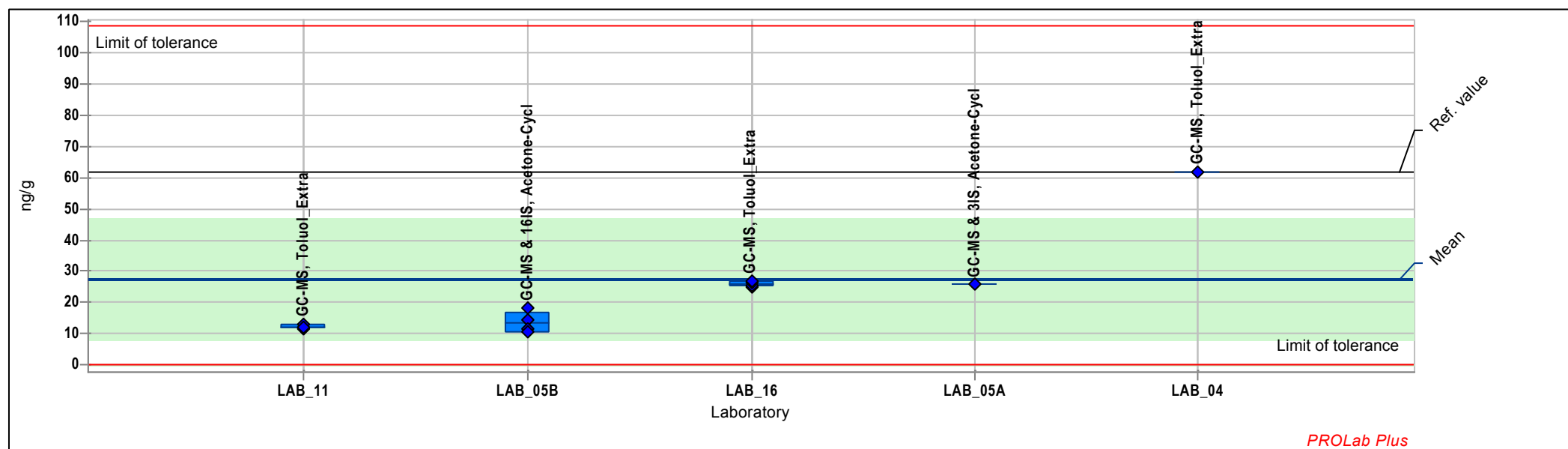


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: PAH_Indeno[1,2,3-cd]pyrene
Mean ± uncertainty: 33,4 ± 35,9 ng/g
Reference value: 51,0 ng/g

Reproducibility SD: 40,2 ng/g
Rel. reproducibility SD: 120,35%
Repeatability SD: 3,8 ng/g
Rel. repeatability SD: 11,43%

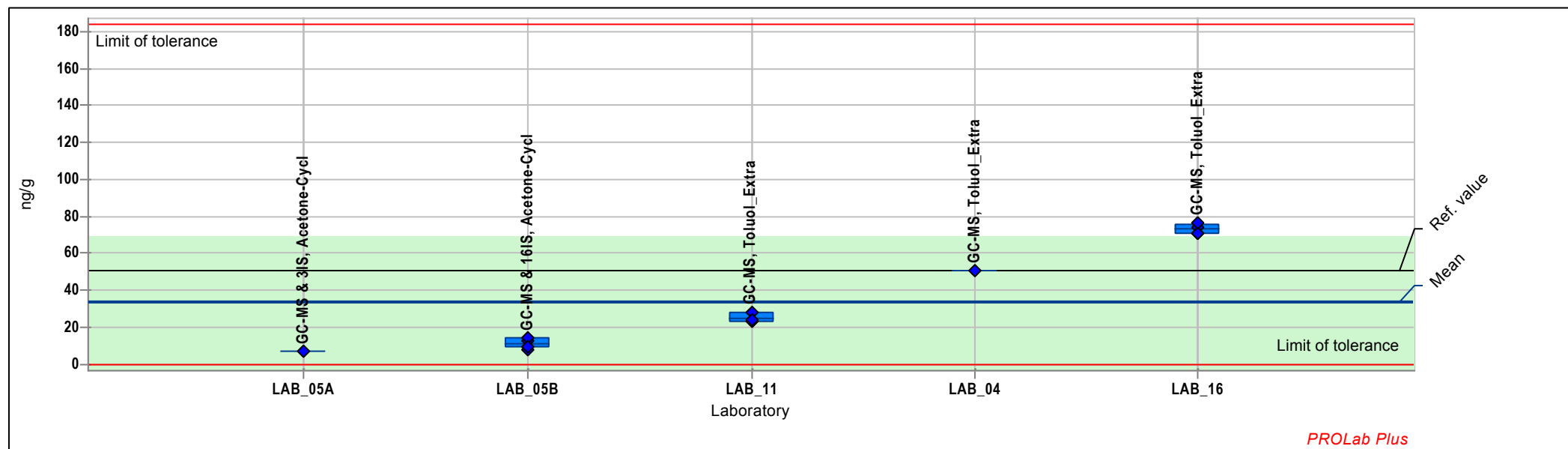


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	754 ng/g
Parameter:	PAH_Naphthalene	Rel. reproducibility SD:	84,14%
Mean ± uncertainty:	896 ± 615 ng/g	Repeatability SD:	36 ng/g
Reference value:	1025 ng/g	Rel. repeatability SD:	4,05%

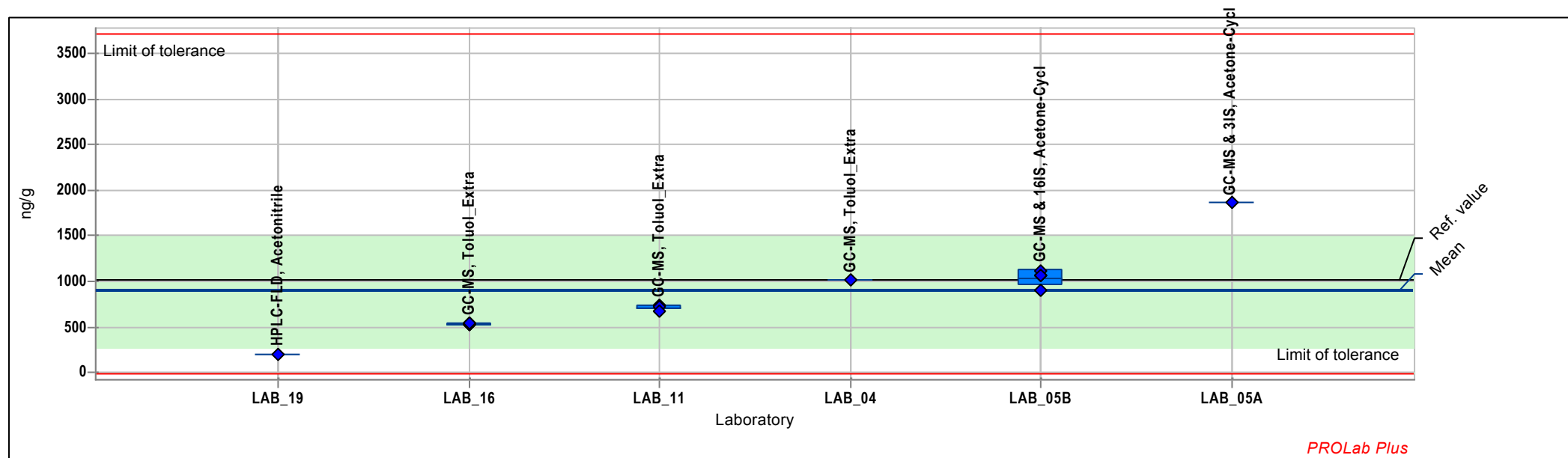


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: PAH_Phenanthrene
Mean \pm uncertainty: 340,8 \pm 262,6 ng/g
Reference value: 816,0 ng/g

Reproducibility SD: 322,7 ng/g
Rel. reproducibility SD: 94,67%
Repeatability SD: 37,9 ng/g
Rel. repeatability SD: 11,12%

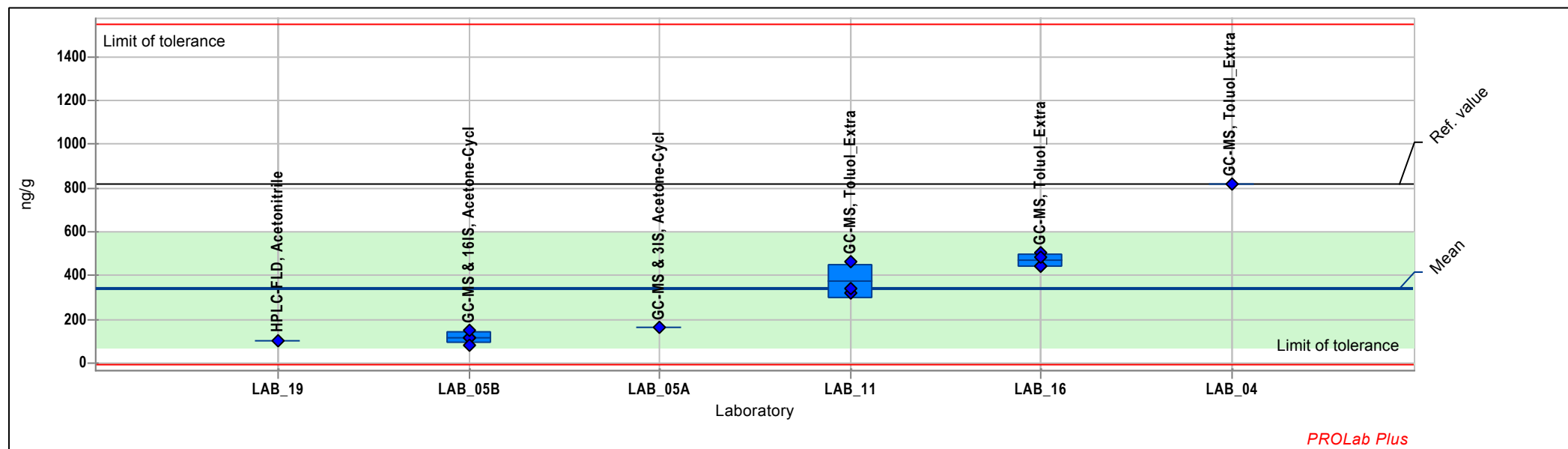


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	113,5 ng/g
Parameter:	PAH_Pyrene	Rel. reproducibility SD:	83,29%
Mean ± uncertainty:	136,3 ± 101,2 ng/g	Repeatability SD:	10,5 ng/g
Reference value:	318,0 ng/g	Rel. repeatability SD:	7,68%

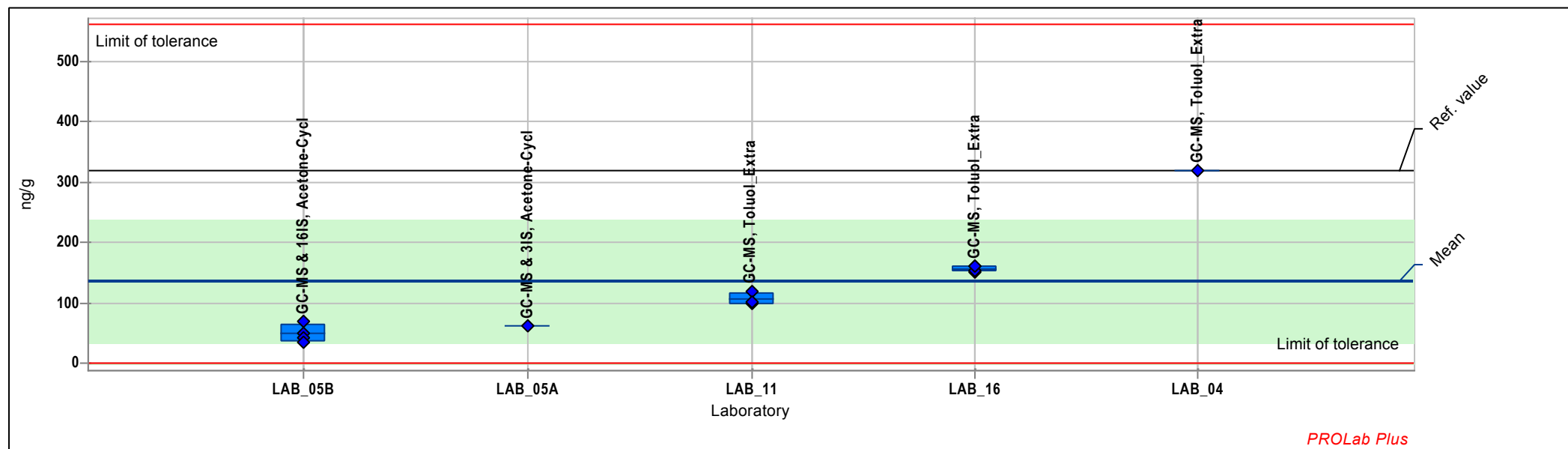


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	7,74 mg/kg
Parameter:	Pb	Rel. reproducibility SD:	44,41%
Mean ± uncertainty:	17,43 ± 5,46 mg/kg	Repeatability SD:	0,70 mg/kg
Reference value:	21,00 mg/kg	Rel. repeatability SD:	4,03%

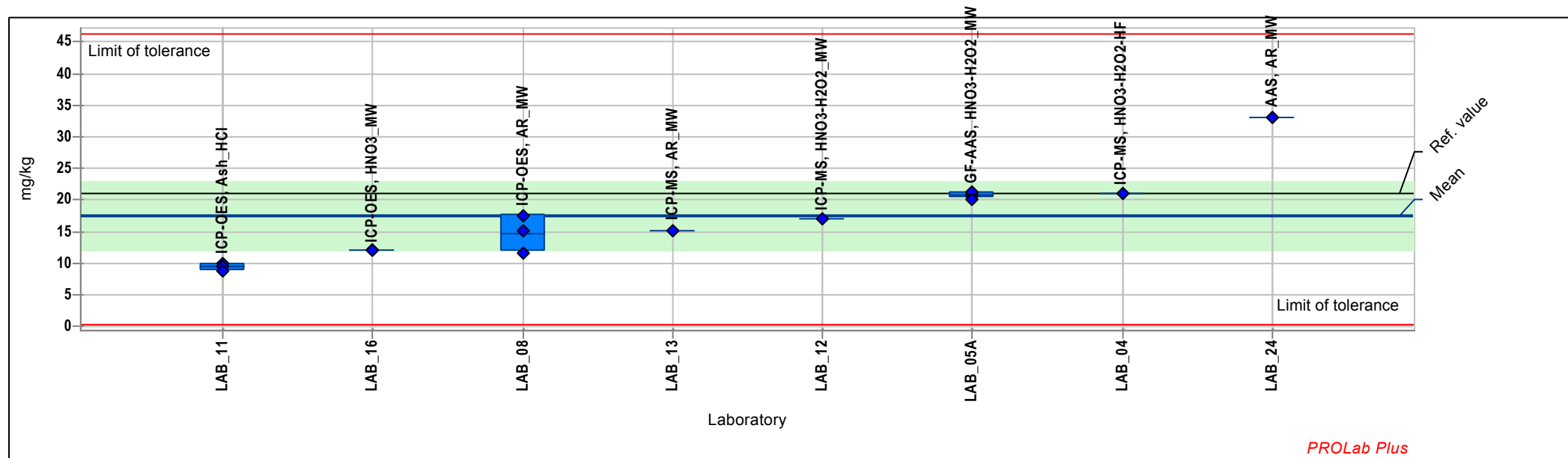


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	0,42
Parameter:	pH	Rel. reproducibility SD:	4,50%
Mean ± uncertainty:	9,30 ± 0,19	Repeatability SD:	0,03
Reference value:	8,30	Rel. repeatability SD:	0,29%

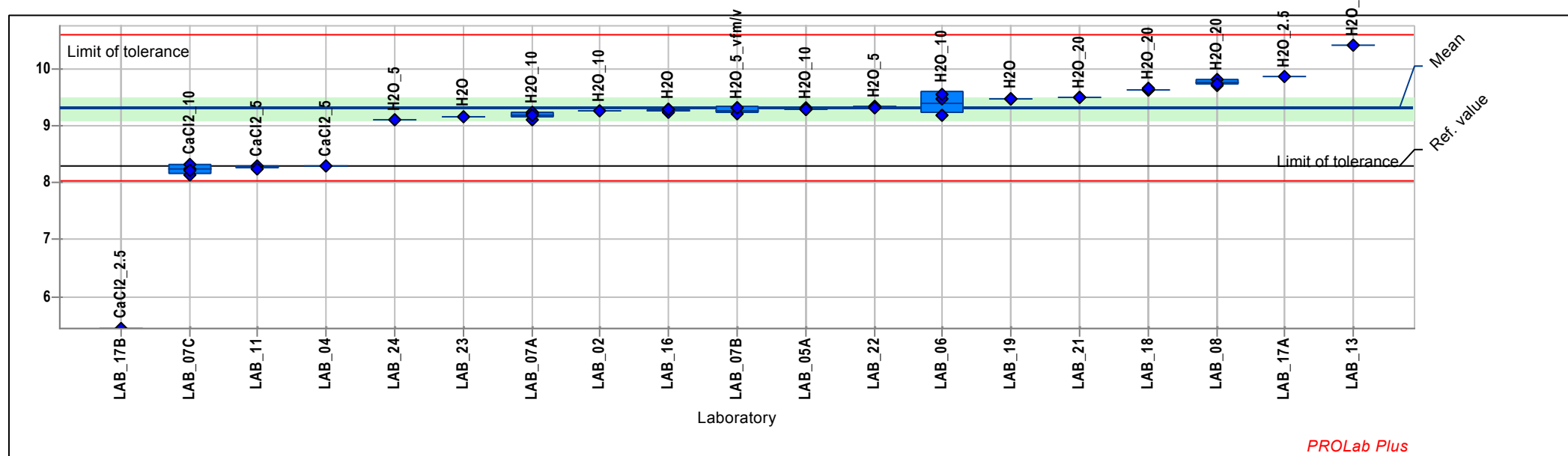


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC2
Parameter: S
Mean ± uncertainty: 0,116 ± 0,032 % w/w
Reference value: 0,140 % w/w

Reproducibility SD: 0,045 % w/w
Rel. reproducibility SD: 38,94%
Repeatability SD: 0,019 % w/w
Rel. repeatability SD: 16,71%

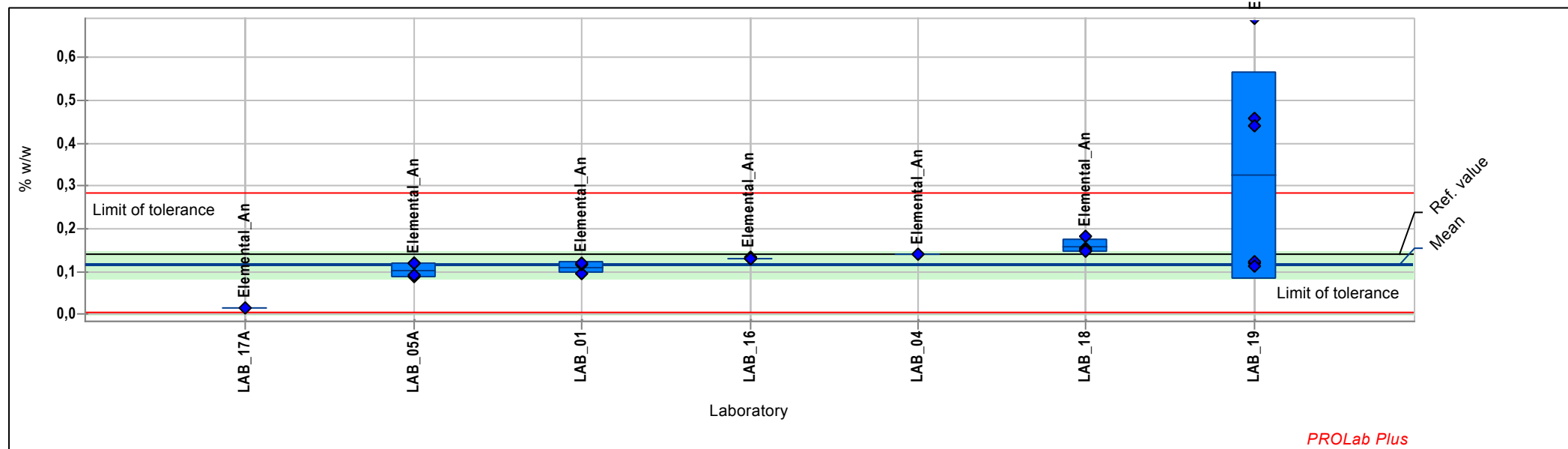


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	0,109 % w/w
Parameter:	S_ICP-OES	Rel. reproducibility SD:	84,86%
Mean ± uncertainty:	0,128 ± 0,097 % w/w	Repeatability SD:	0,004 % w/w
Reference value:	0,155 % w/w	Rel. repeatability SD:	3,00%

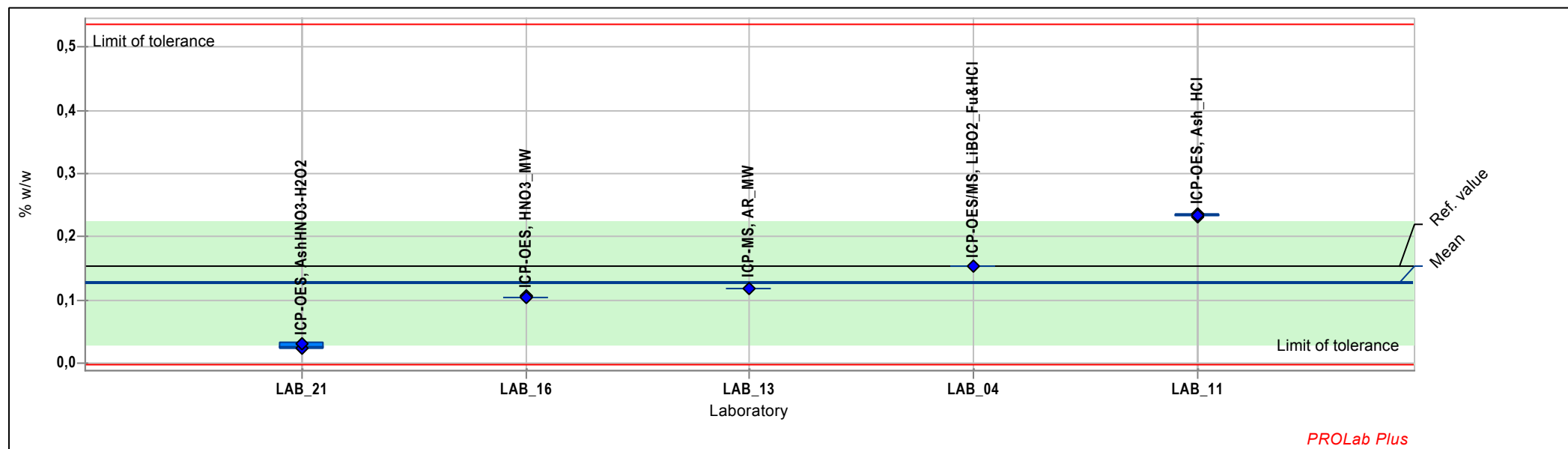


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Box plot of the laboratory results



Sample: BC2
Parameter: Specific_surface_area
Mean \pm uncertainty: 97,8 \pm 20,3 m2/g
Reference value:
Reproducibility SD: 28,7 m2/g
Rel. reproducibility SD: 29,38%
Repeatability SD: 1,6 m2/g
Rel. repeatability SD: 1,68%

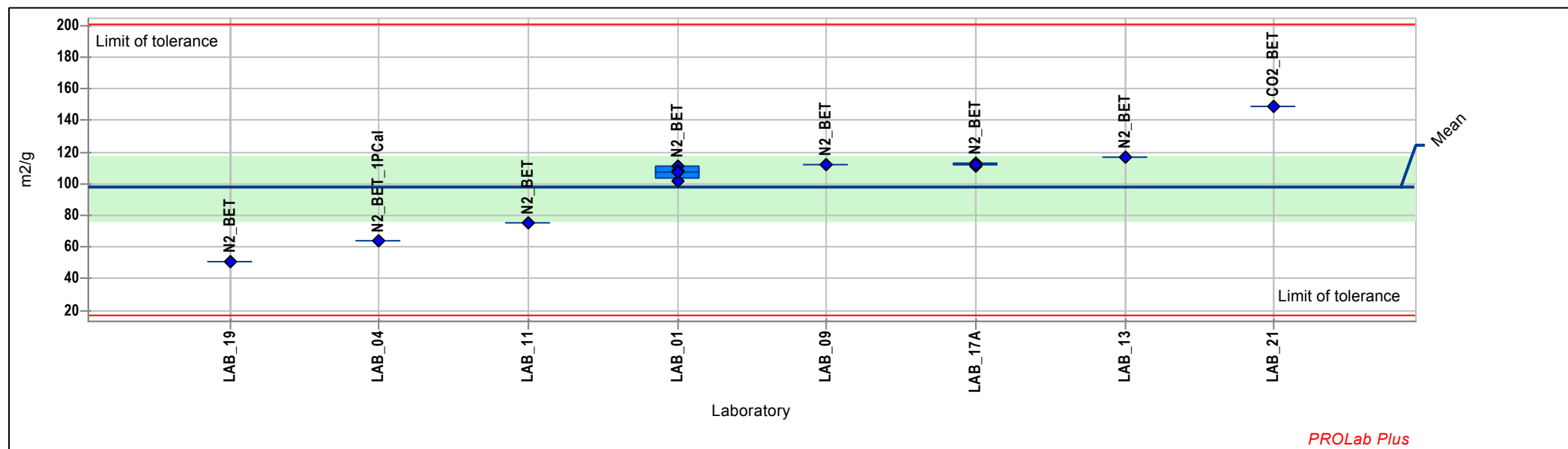


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC2	Reproducibility SD:	38,5 mg/kg
Parameter:	Zn	Rel. reproducibility SD:	67,08%
Mean ± uncertainty:	57,4 ± 24,2 mg/kg	Repeatability SD:	4,9 mg/kg
Reference value:	86,0 mg/kg	Rel. repeatability SD:	8,51%

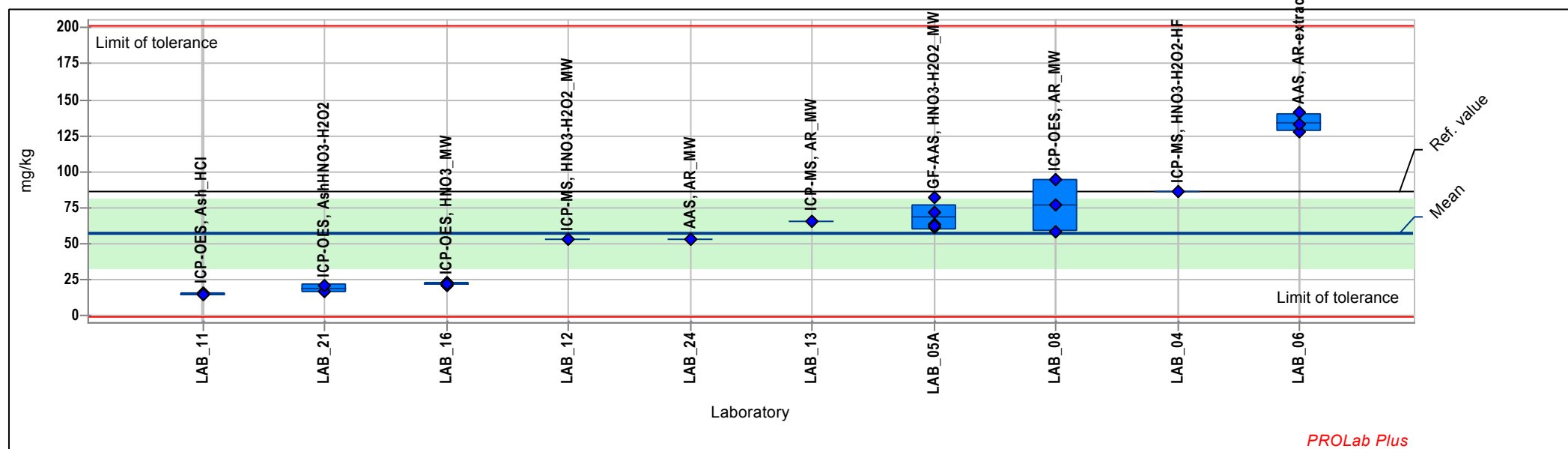


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	1,54 % w/w
Parameter:	Ash	Rel. reproducibility SD:	2,13%
Mean ± uncertainty:	72,45 ± 0,82 % w/w	Repeatability SD:	0,20 % w/w
Reference value:	73,80 % w/w	Rel. repeatability SD:	0,28%

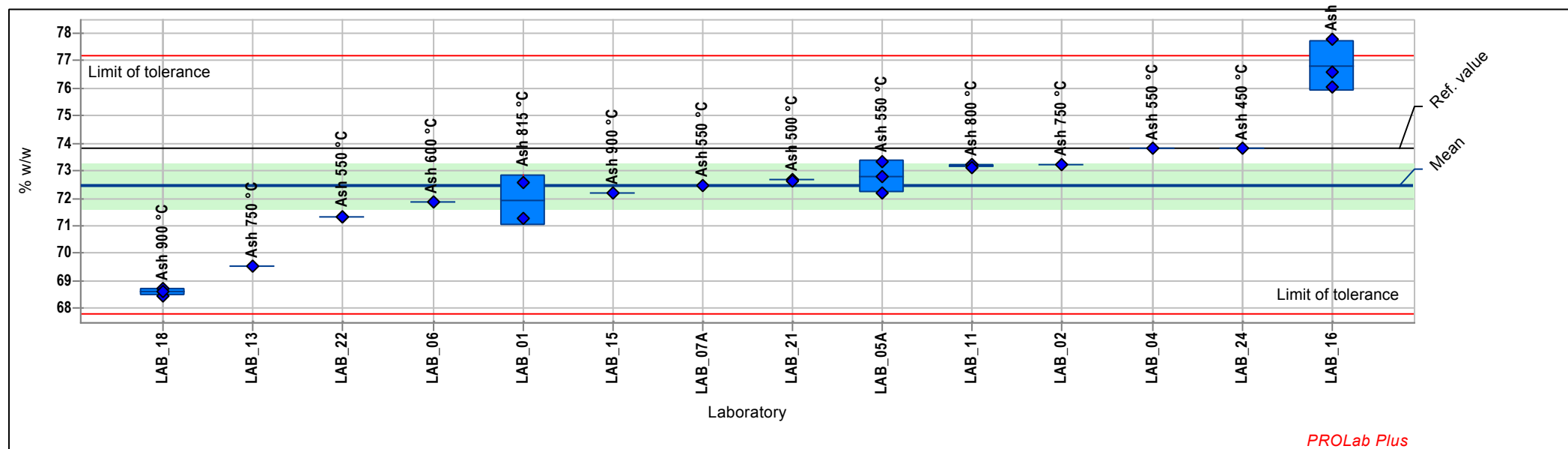


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	0,73 % w/w
Parameter:	C	Rel. reproducibility SD:	3,93%
Mean ± uncertainty:	18,48 ± 0,37 % w/w	Repeatability SD:	0,11 % w/w
Reference value:	18,70 % w/w	Rel. repeatability SD:	0,62%

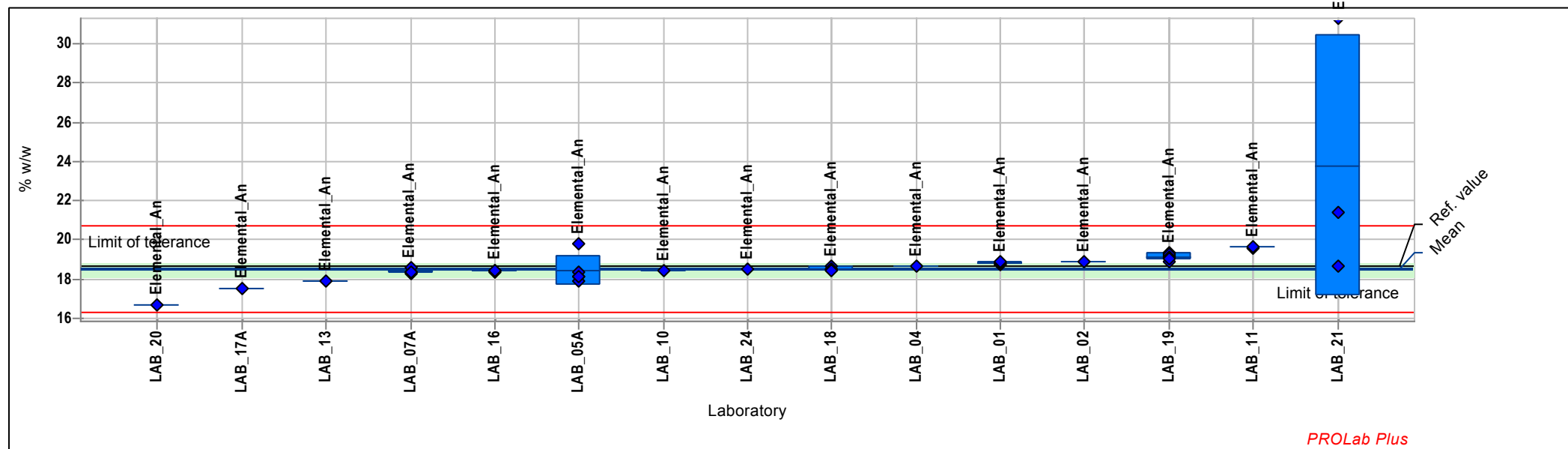


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	17316 mg/kg
Parameter:	Ca	Rel. reproducibility SD:	52,17%
Mean ± uncertainty:	33194 ± 12243 mg/kg	Repeatability SD:	334 mg/kg
Reference value:	54400 mg/kg	Rel. repeatability SD:	1,01%

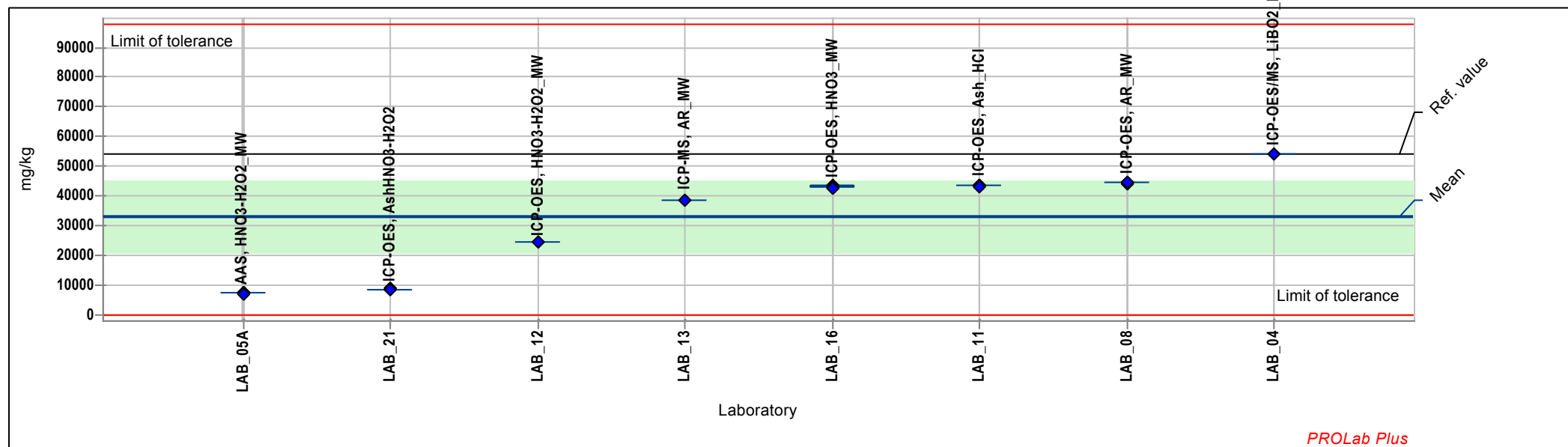


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	1,974 mg/kg
Parameter:	Cd	Rel. reproducibility SD:	57,80%
Mean ± uncertainty:	3,415 ± 1,315 mg/kg	Repeatability SD:	0,109 mg/kg
Reference value:	3,800 mg/kg	Rel. repeatability SD:	3,20%

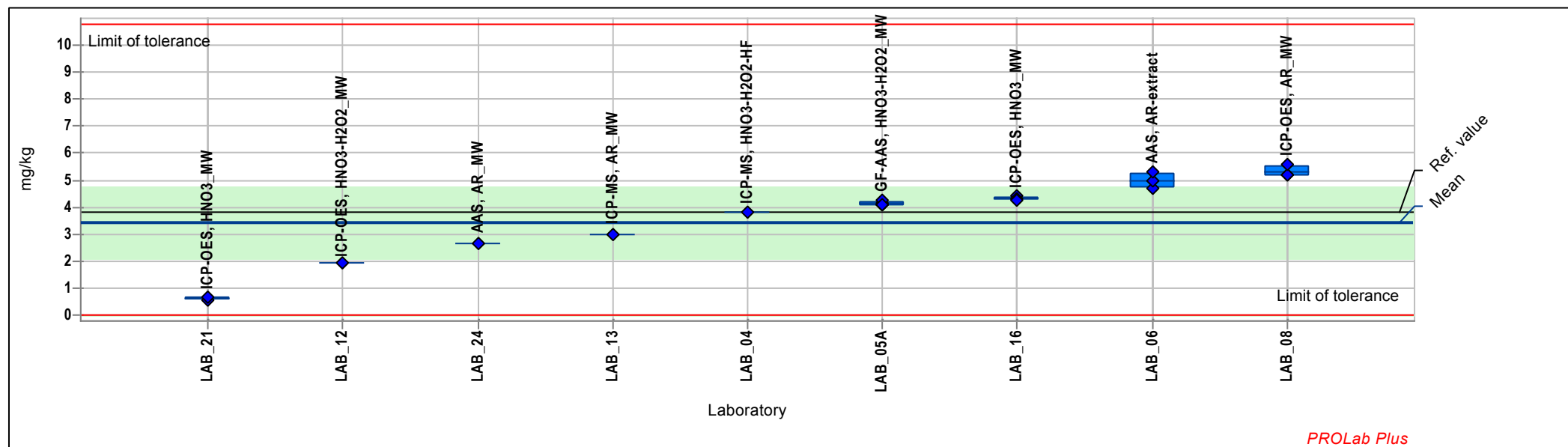


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	19,7 mg/kg
Parameter:	Cr	Rel. reproducibility SD:	30,59%
Mean ± uncertainty:	64,2 ± 13,8 mg/kg	Repeatability SD:	2,5 mg/kg
Reference value:	89,0 mg/kg	Rel. repeatability SD:	3,91%

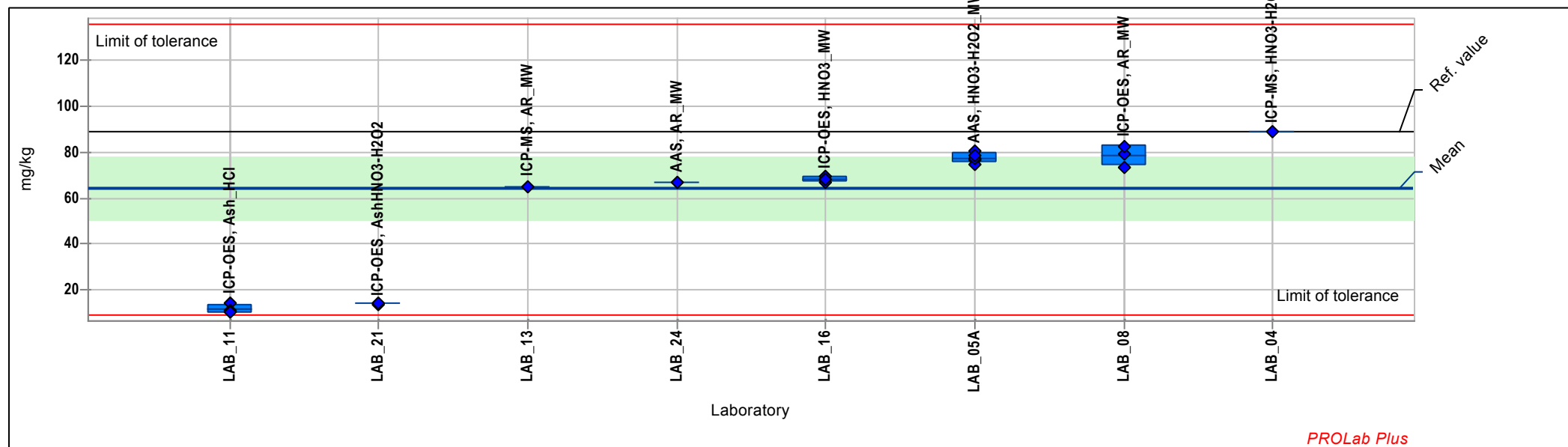


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	263,2 mg/kg
Parameter:	Cu	Rel. reproducibility SD:	55,35%
Mean ± uncertainty:	475,6 ± 166,3 mg/kg	Repeatability SD:	15,7 mg/kg
Reference value:	600,0 mg/kg	Rel. repeatability SD:	3,30%

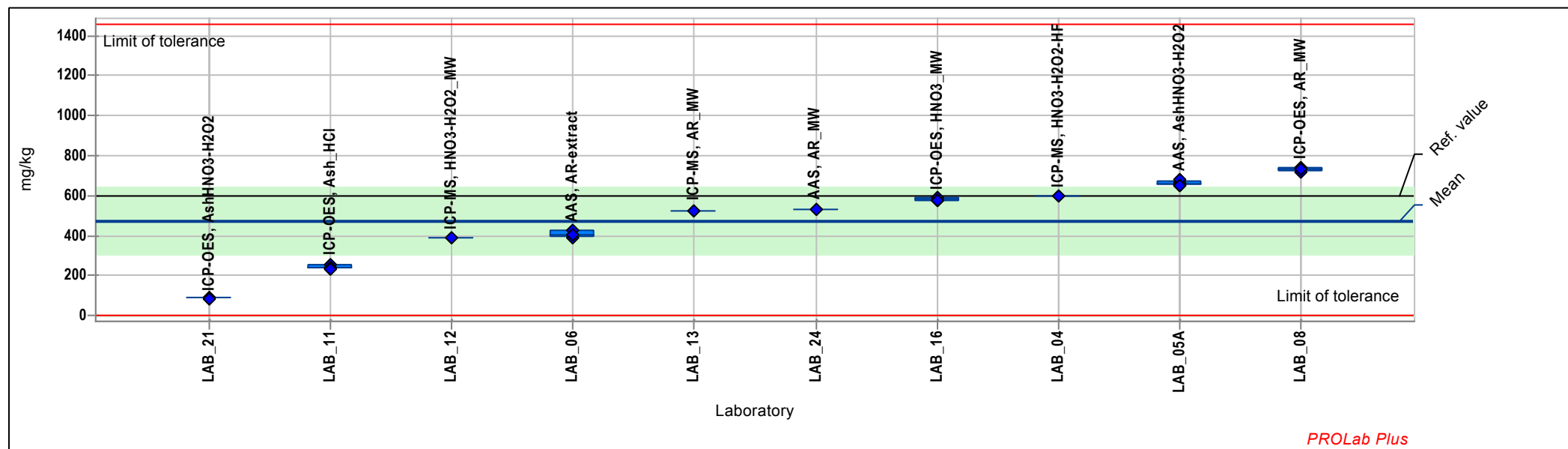


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	530 uS/cm
Parameter:	EC	Rel. reproducibility SD:	67,61%
Mean ± uncertainty:	785 ± 294 uS/cm	Repeatability SD:	16 uS/cm
Reference value:	617 uS/cm	Rel. repeatability SD:	2,08%

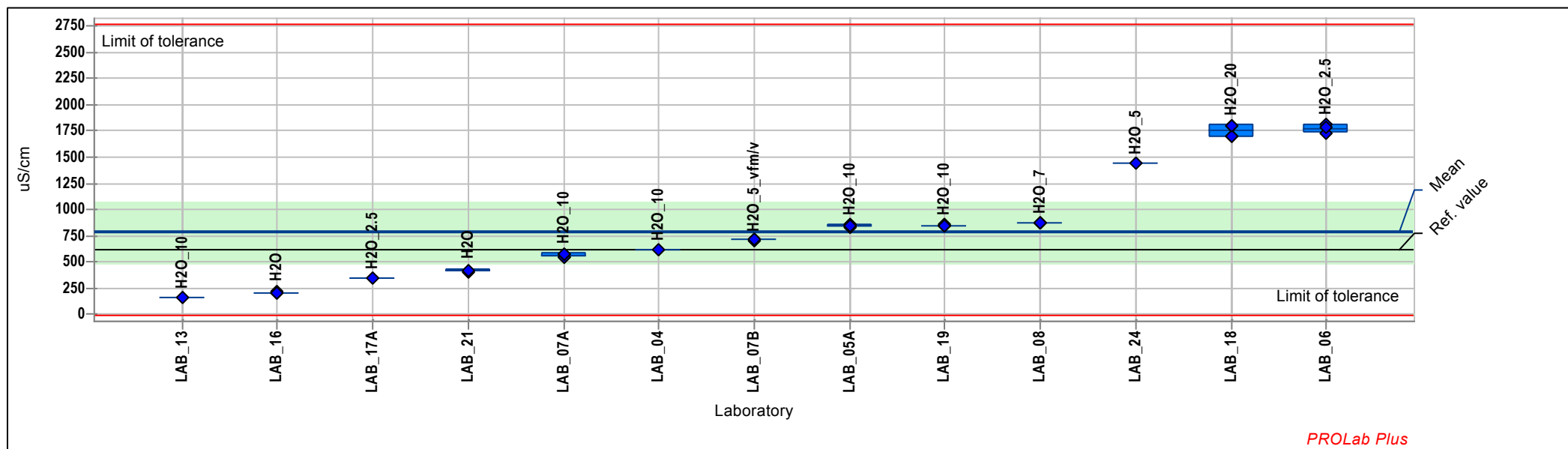


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	11354 mg/kg
Parameter:	Fe	Rel. reproducibility SD:	34,43%
Mean ± uncertainty:	32982 ± 8566 mg/kg	Repeatability SD:	862 mg/kg
Reference value:	48000 mg/kg	Rel. repeatability SD:	2,61%

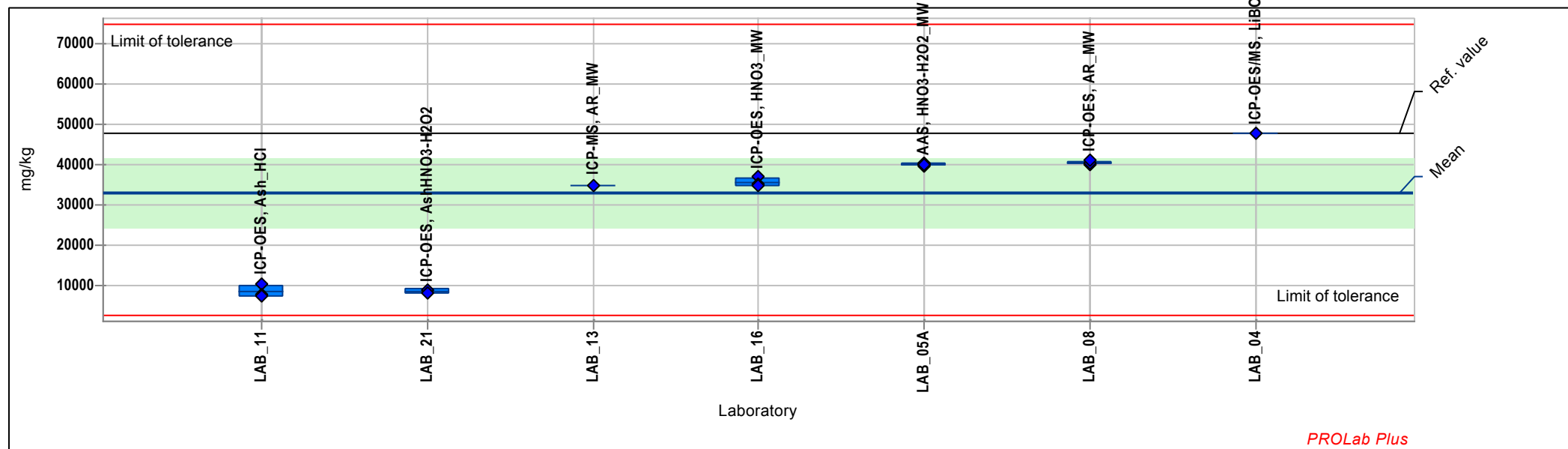


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC3
Parameter: H
Mean \pm uncertainty: $1,18 \pm 0,11$ % w/w
Reference value: 0,93 % w/w

Reproducibility SD: 0,18 % w/w
Rel. reproducibility SD: 15,38%
Repeatability SD: 0,03 % w/w
Rel. repeatability SD: 2,66%

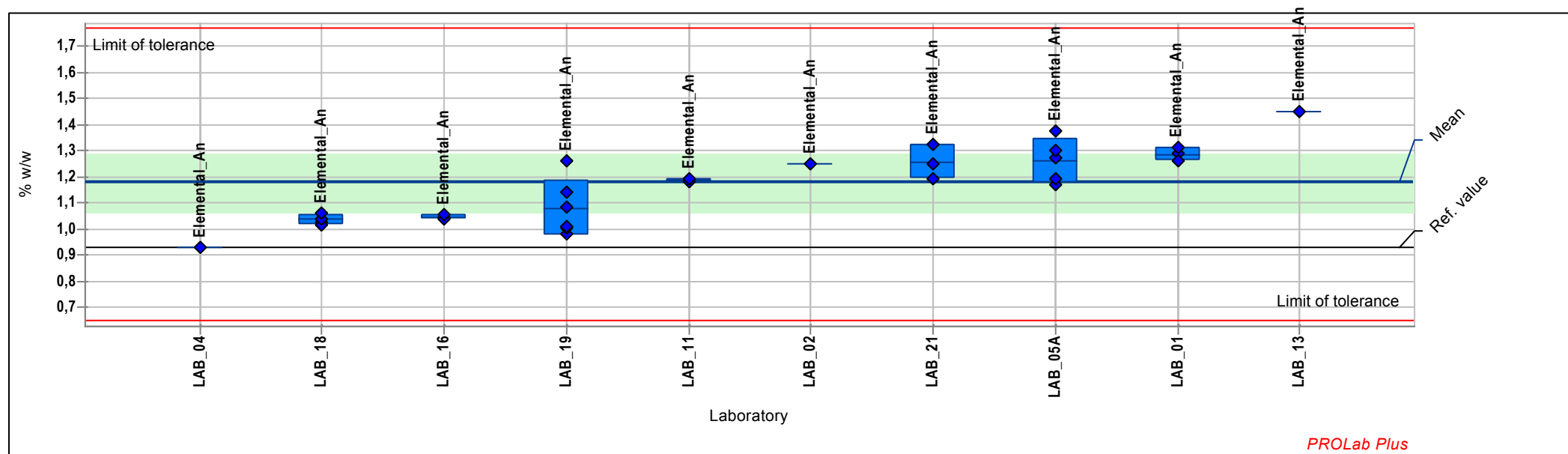


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Box plot of the laboratory results



Sample: BC3
Parameter: K
Mean ± uncertainty: 4096 ± 1708 mg/kg
Reference value: 10300 mg/kg

Reproducibility SD: 2416 mg/kg
Rel. reproducibility SD: 58,98%
Repeatability SD: 54 mg/kg
Rel. repeatability SD: 1,31%

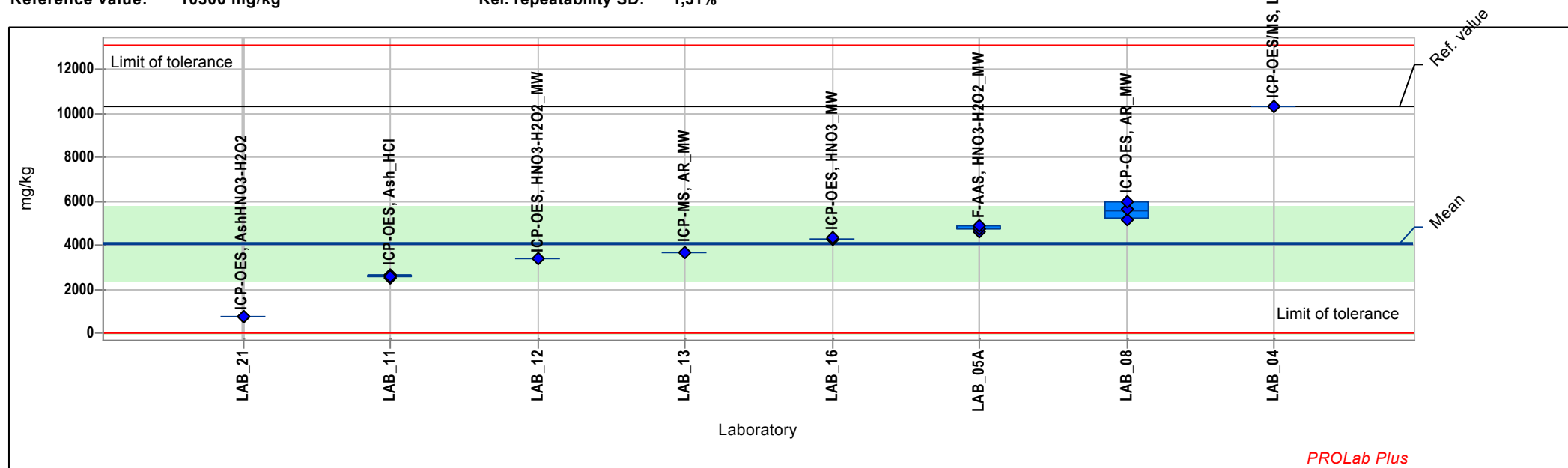


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	4543 mg/kg
Parameter:	Mg	Rel. reproducibility SD:	51,18%
Mean ± uncertainty:	8877 ± 3212 mg/kg	Repeatability SD:	115 mg/kg
Reference value:	13300 mg/kg	Rel. repeatability SD:	1,29%

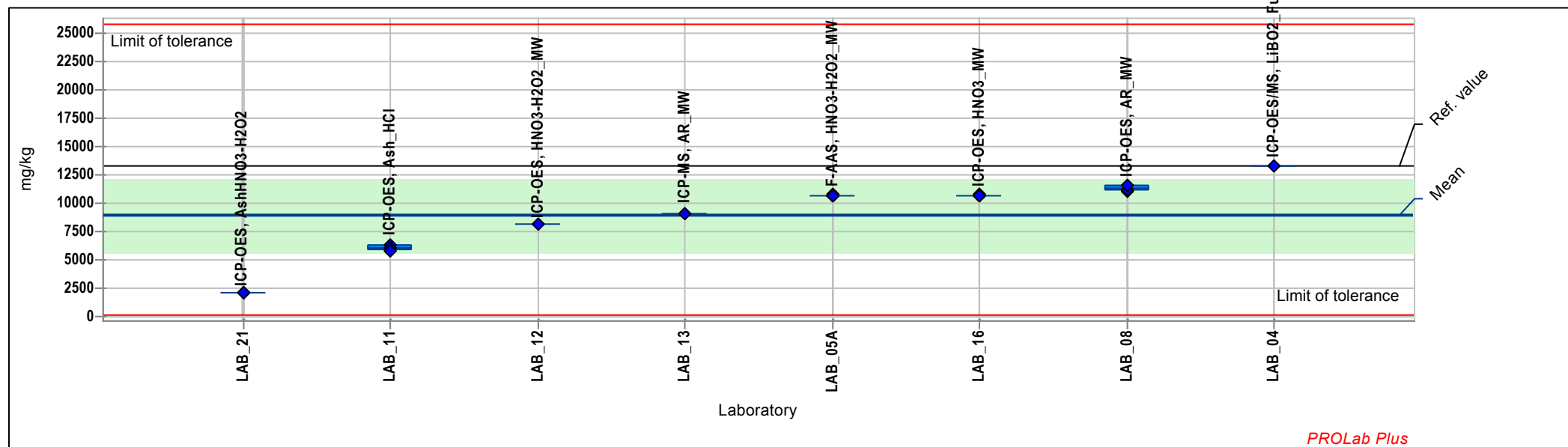


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Box plot of the laboratory results



Sample: BC3
Parameter: Mn
Mean ± uncertainty: 514 ± 169 mg/kg
Reference value:
Reproducibility SD: 224 mg/kg
Rel. reproducibility SD: 43,59%
Repeatability SD: 10 mg/kg
Rel. repeatability SD: 1,88%

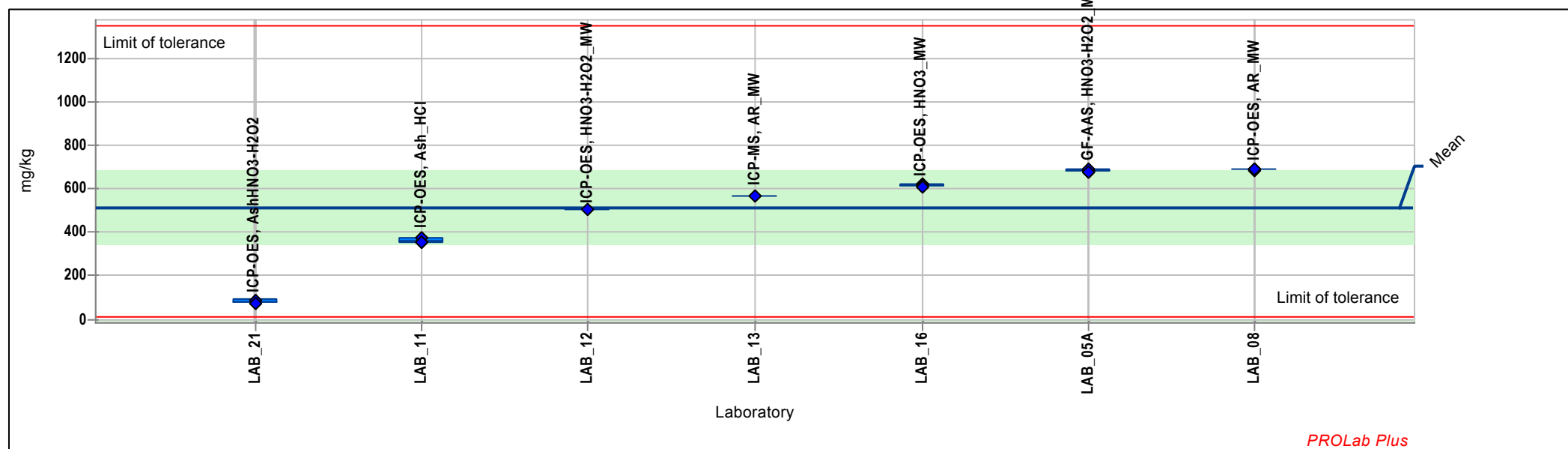


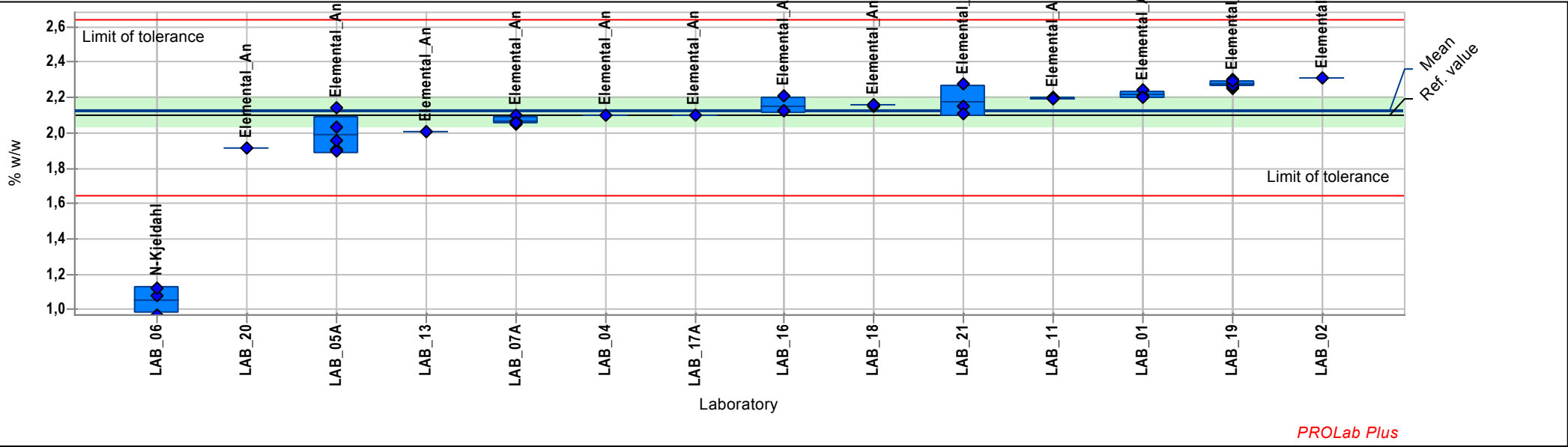
Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Box plot of the laboratory results



Sample: BC3
Parameter: N
Mean ± uncertainty: 2,13 ± 0,08 % w/w
Reference value: 2,10 % w/w
Reproducibility SD: 0,16 % w/w
Rel. reproducibility SD: 7,62%
Repeatability SD: 0,04 % w/w
Rel. repeatability SD: 1,88%



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Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	123 mg/kg
Parameter:	Na	Rel. reproducibility SD:	9,68%
Mean ± uncertainty:	1273 ± 86 mg/kg	Repeatability SD:	26 mg/kg
Reference value:	4140 mg/kg	Rel. repeatability SD:	2,05%

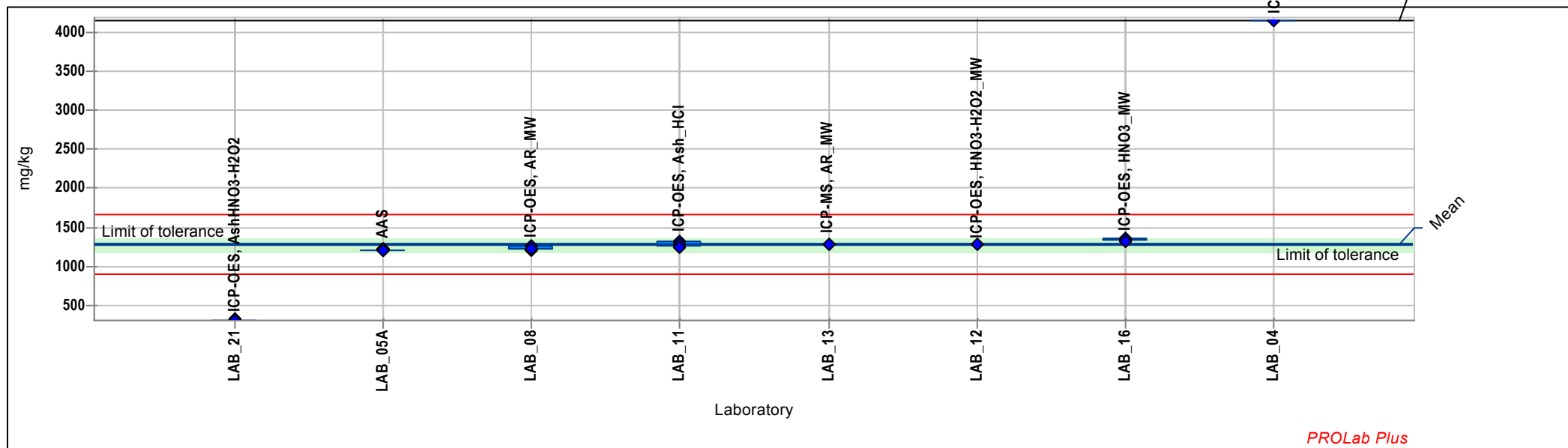


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	17,1 mg/kg
Parameter:	Ni	Rel. reproducibility SD:	28,49%
Mean ± uncertainty:	60,1 ± 11,4 mg/kg	Repeatability SD:	2,2 mg/kg
Reference value:	66,0 mg/kg	Rel. repeatability SD:	3,63%

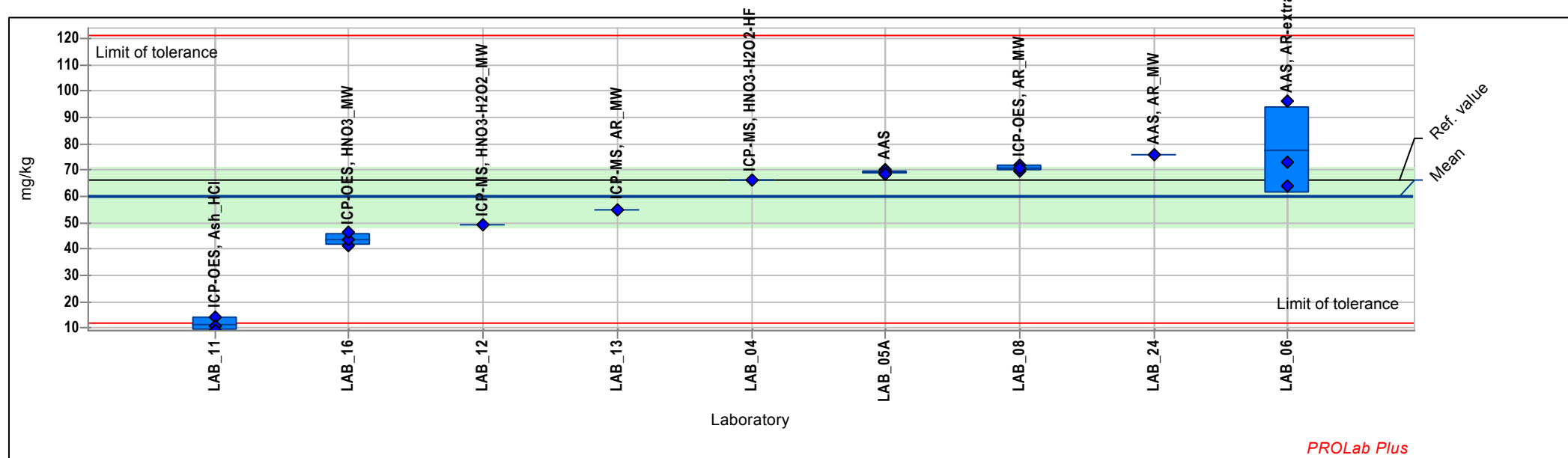


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	12,46 % w/w
Parameter:	O	Rel. reproducibility SD:	119,18%
Mean ± uncertainty:	10,45 ± 12,45 % w/w	Repeatability SD:	0,83 % w/w
Reference value:	3,70 % w/w	Rel. repeatability SD:	7,94%

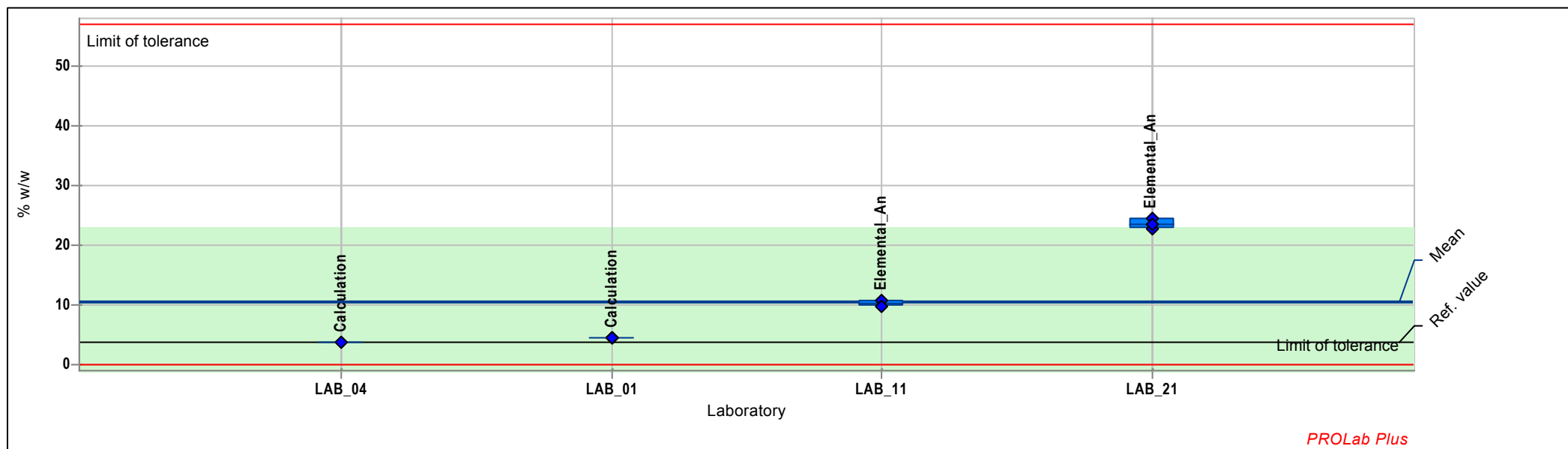


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	9894 mg/kg
Parameter:	P	Rel. reproducibility SD:	16,34%
Mean ± uncertainty:	60531 ± 8837 mg/kg	Repeatability SD:	727 mg/kg
Reference value:	61500 mg/kg	Rel. repeatability SD:	1,20%

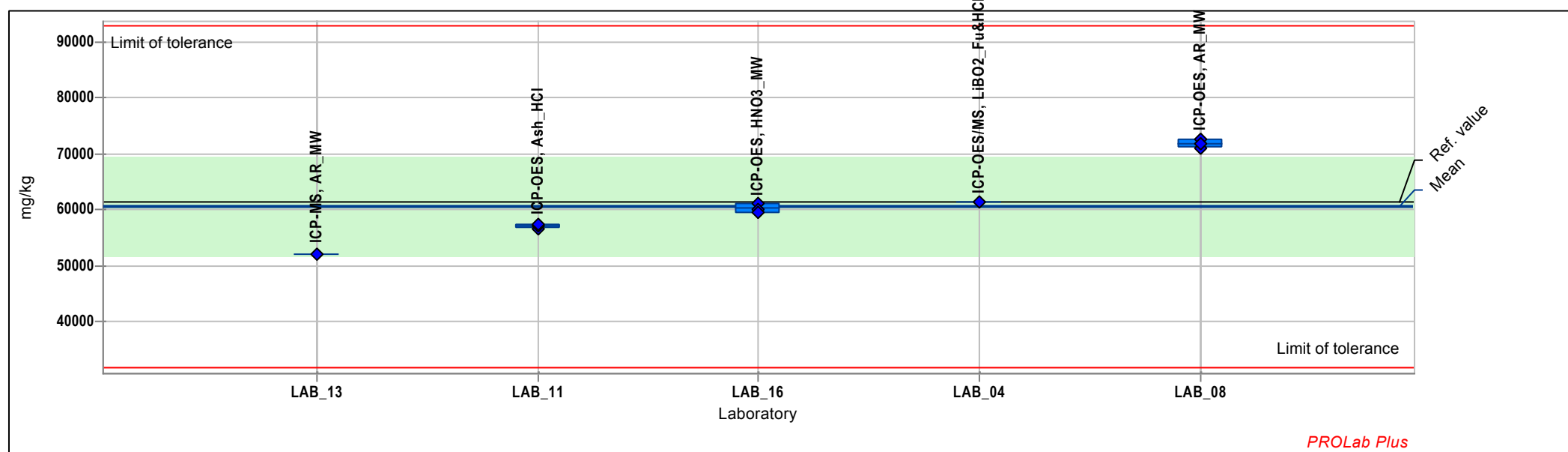


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	336,3 ng/g
Parameter:	PAH_Sum	Rel. reproducibility SD:	39,92%
Mean ± uncertainty:	842,6 ± 298,7 ng/g	Repeatability SD:	48,5 ng/g
Reference value:	962,2 ng/g	Rel. repeatability SD:	5,76%

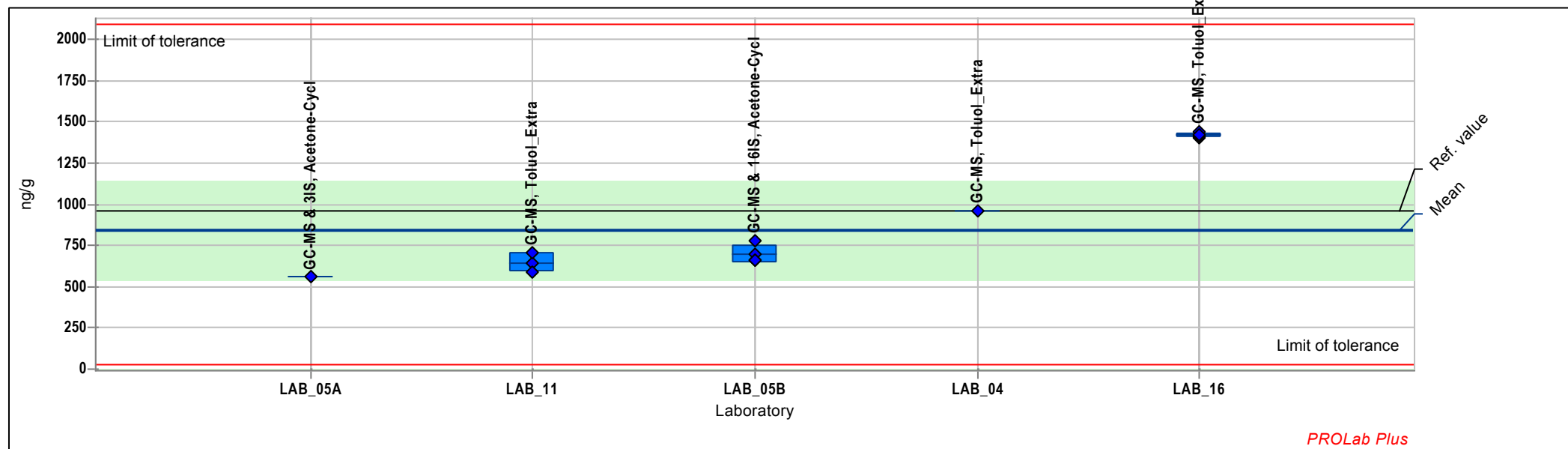


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	6,2 ng/g
Parameter:	PAH_Acenaphthene	Rel. reproducibility SD:	73,35%
Mean ± uncertainty:	8,4 ± 5,5 ng/g	Repeatability SD:	1,0 ng/g
Reference value:	10,0 ng/g	Rel. repeatability SD:	12,39%

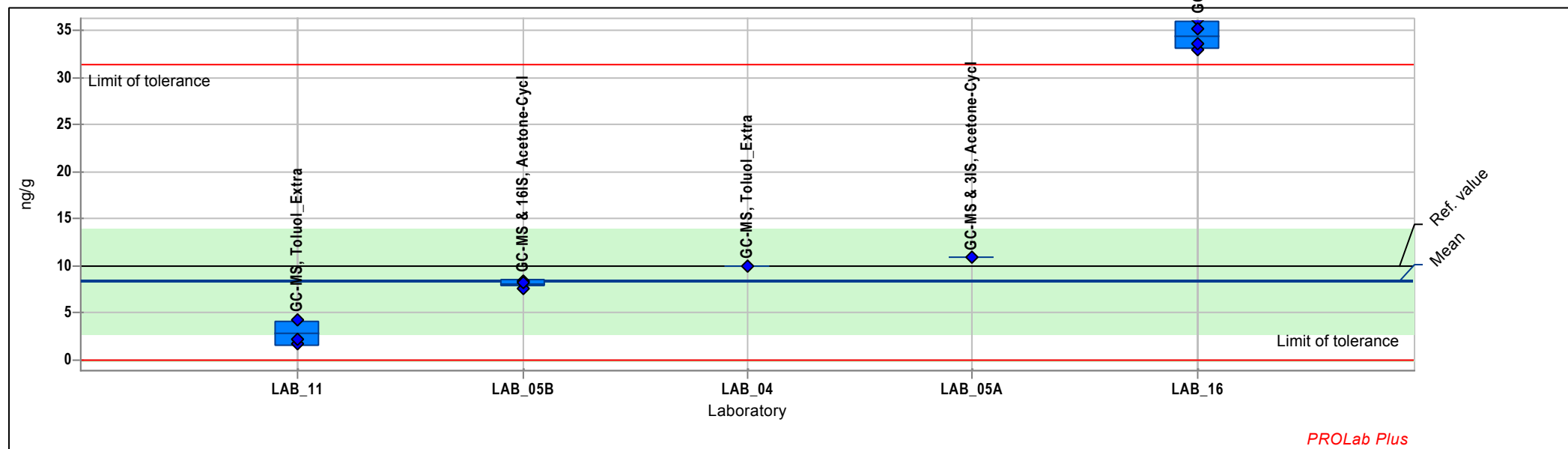


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	9,5 ng/g
Parameter:	PAH_Acenaphthylene	Rel. reproducibility SD:	98,96%
Mean ± uncertainty:	9,6 ± 8,0 ng/g	Repeatability SD:	3,8 ng/g
Reference value:	10,0 ng/g	Rel. repeatability SD:	39,80%

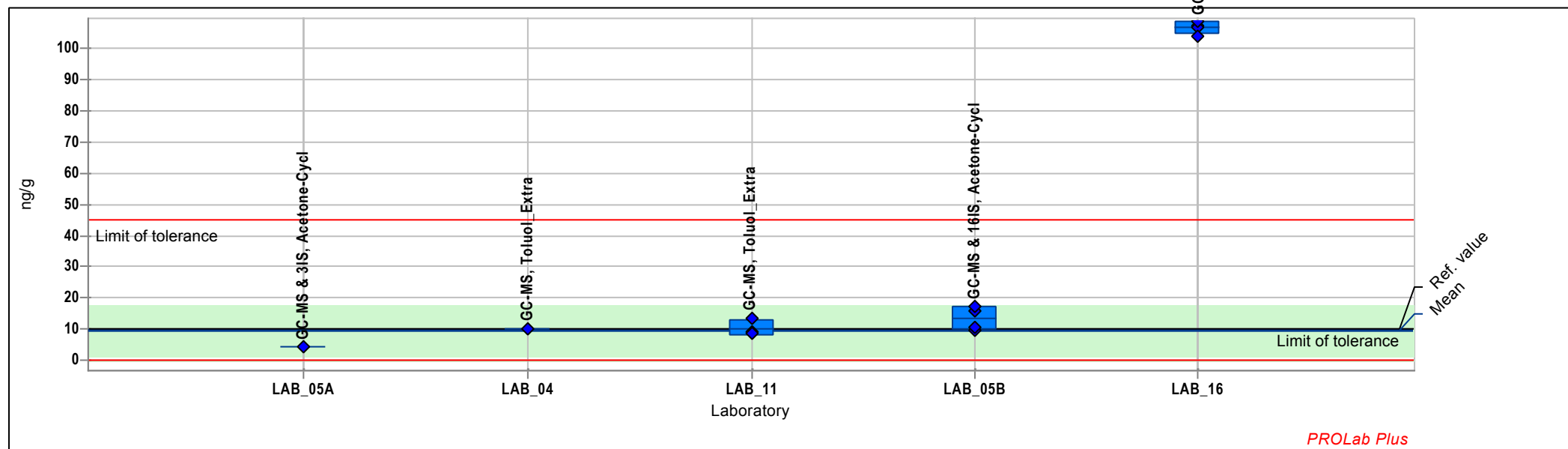


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC3
Parameter: PAH_Anthracene
Mean ± uncertainty: 29,4 ± 18,8 ng/g
Reference value: 41,0 ng/g

Reproducibility SD: 21,1 ng/g
Rel. reproducibility SD: 71,56%
Repeatability SD: 1,9 ng/g
Rel. repeatability SD: 6,50%

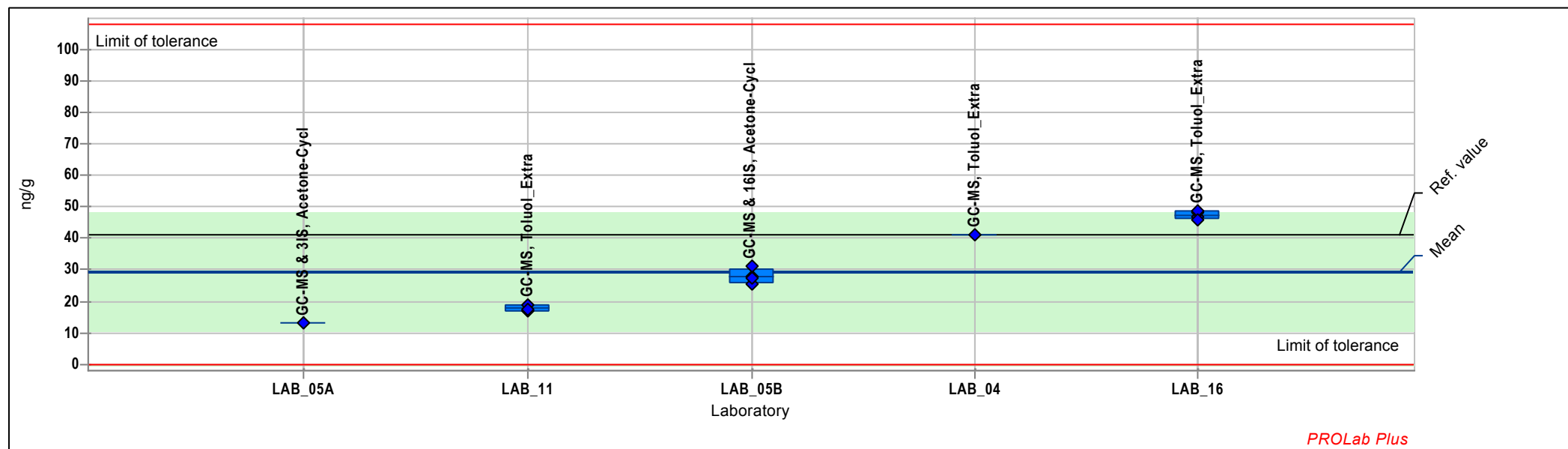


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC3
Parameter: PAH_Benzo[a]anthracene
Mean ± uncertainty: 32,5 ± 25,5 ng/g
Reference value: 41,0 ng/g

Reproducibility SD: 28,6 ng/g
Rel. reproducibility SD: 87,98%
Repeatability SD: 2,9 ng/g
Rel. repeatability SD: 8,94%

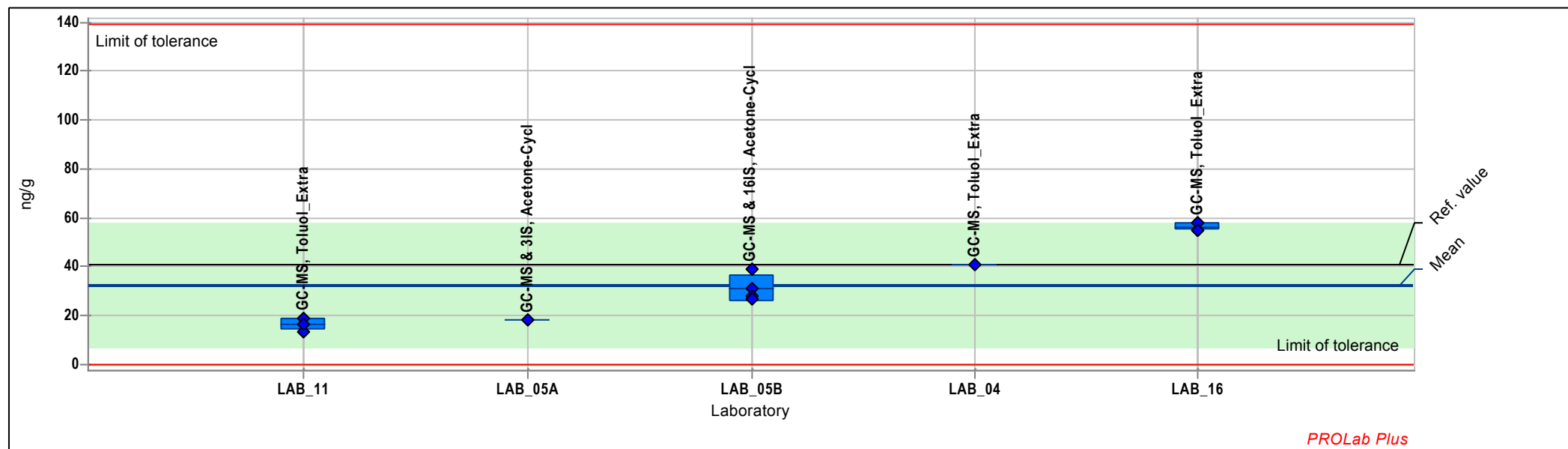


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC3
Parameter: PAH_Benzo[a]pyrene
Mean ± uncertainty: 27,7 ± 21,1 ng/g
Reference value: 31,0 ng/g

Reproducibility SD: 23,7 ng/g
Rel. reproducibility SD: 85,44%
Repeatability SD: 2,6 ng/g
Rel. repeatability SD: 9,41%

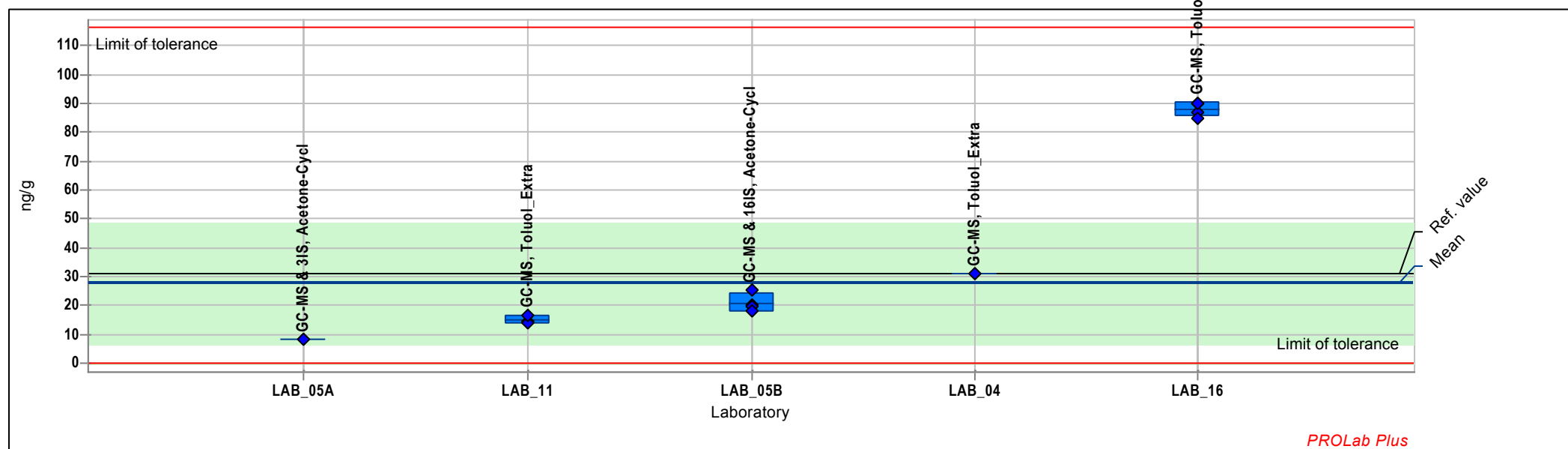


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	10,6 ng/g
Parameter:	PAH_Benzo[b]fluoranthene	Rel. reproducibility SD:	69,73%
Mean ± uncertainty:	15,2 ± 9,4 ng/g	Repeatability SD:	2,0 ng/g
Reference value:	21,0 ng/g	Rel. repeatability SD:	13,25%

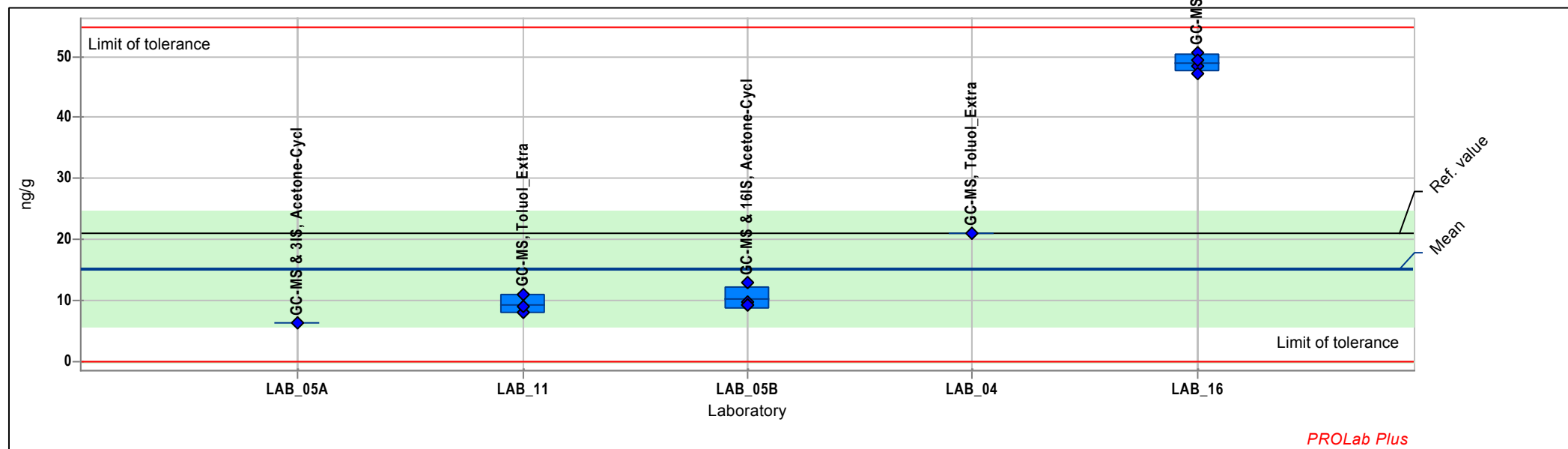


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC3
Parameter: PAH_Benzo[k]fluoranthene
Mean ± uncertainty: 7,1 ± 2,9 ng/g
Reference value: 10,0 ng/g

Reproducibility SD: 3,2 ng/g
Rel. reproducibility SD: 45,02%
Repeatability SD: 0,5 ng/g
Rel. repeatability SD: 7,44%

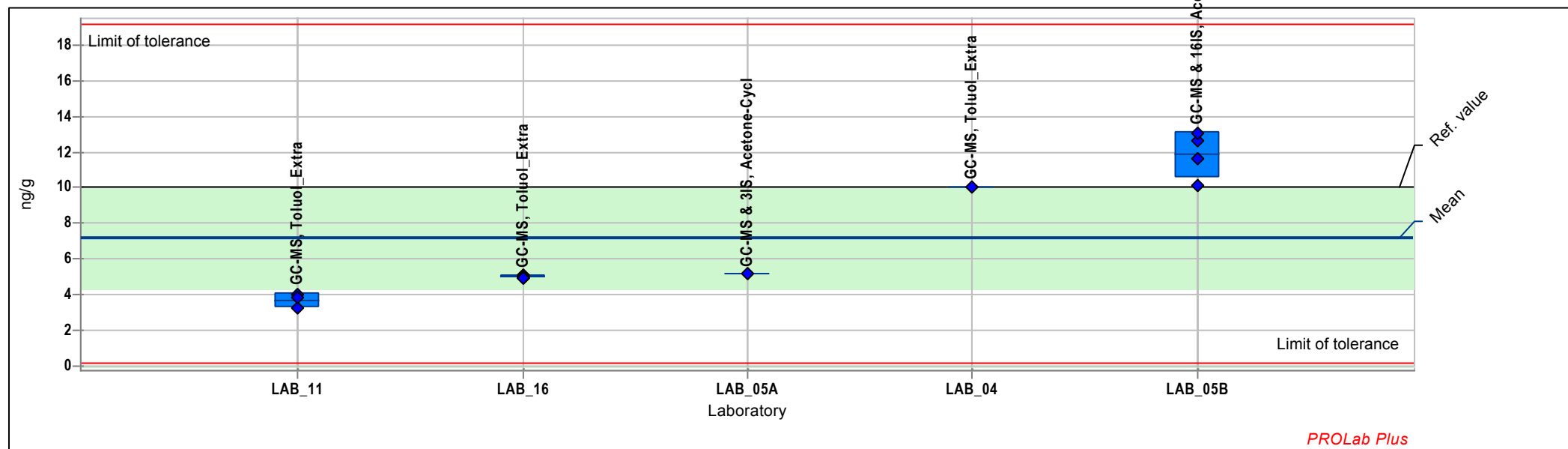


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	5,6 ng/g
Parameter:	PAH_Benzo[ghi]perylene	Rel. reproducibility SD:	36,27%
Mean ± uncertainty:	15,5 ± 4,9 ng/g	Repeatability SD:	1,6 ng/g
Reference value:	21,0 ng/g	Rel. repeatability SD:	10,63%

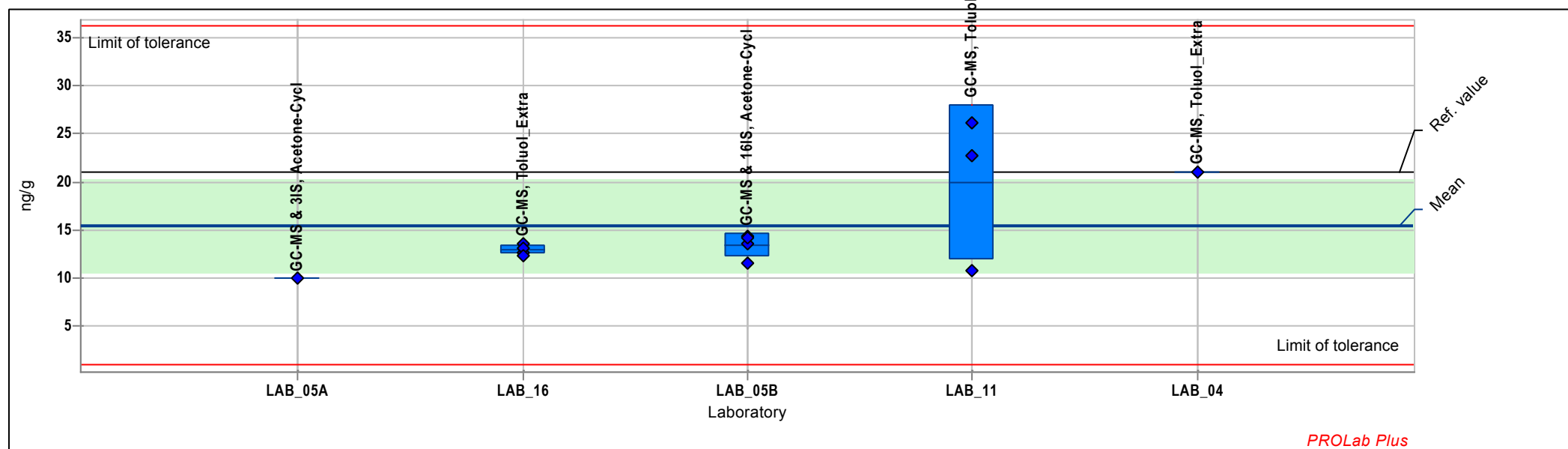


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	48,5 ng/g
Parameter:	PAH_Chrysene	Rel. reproducibility SD:	123,41%
Mean ± uncertainty:	39,3 ± 43,3 ng/g	Repeatability SD:	4,1 ng/g
Reference value:	82,0 ng/g	Rel. repeatability SD:	10,36%

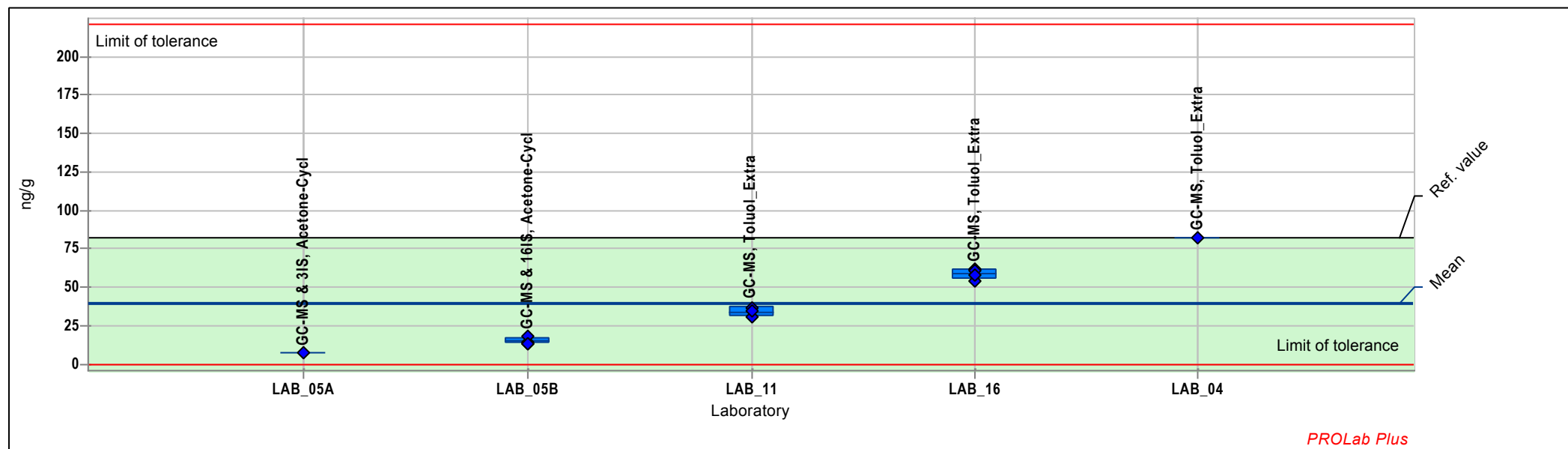


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	4,3 ng/g
Parameter:	PAH_Dibenzo[a,h]anthracene	Rel. reproducibility SD:	94,45%
Mean ± uncertainty:	4,6 ± 4,2 ng/g	Repeatability SD:	1,6 ng/g
Reference value:	6,2 ng/g	Rel. repeatability SD:	35,68%

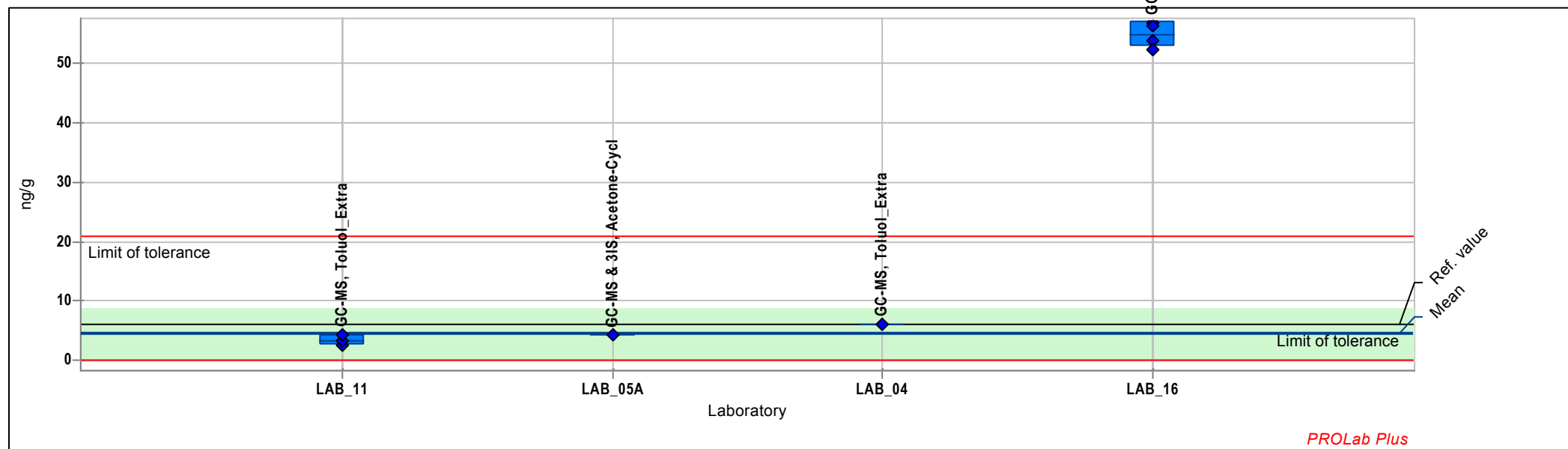


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	28,4 ng/g
Parameter:	PAH_Fluoranthene	Rel. reproducibility SD:	59,69%
Mean ± uncertainty:	47,6 ± 25,3 ng/g	Repeatability SD:	2,9 ng/g
Reference value:	82,0 ng/g	Rel. repeatability SD:	6,09%

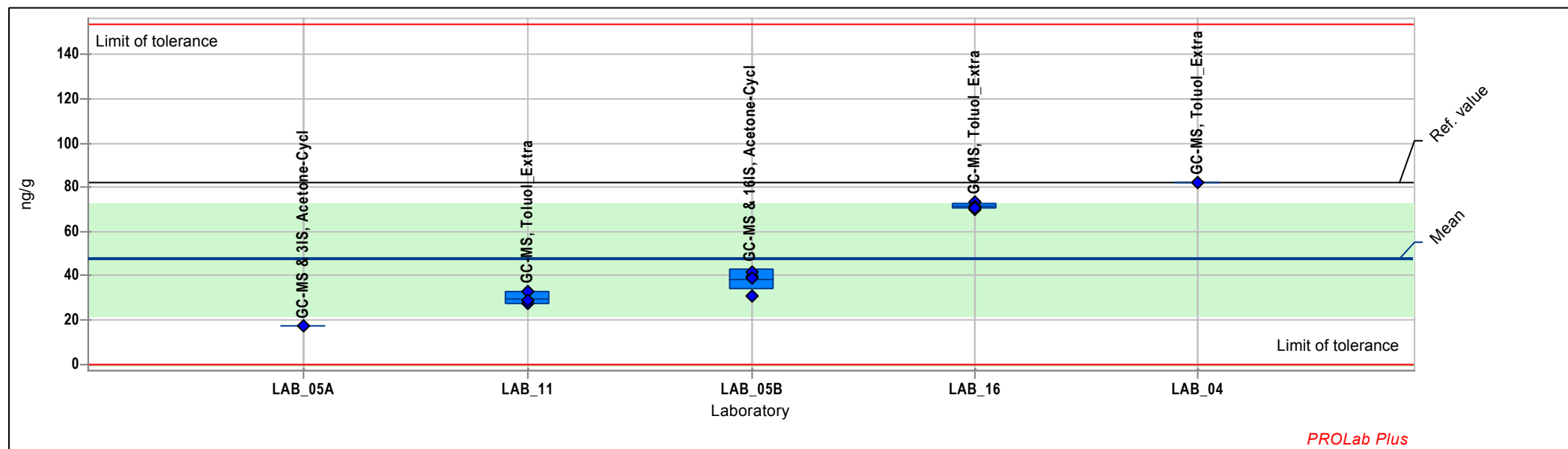


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	2,0 ng/g
Parameter:	PAH_Fluorene	Rel. reproducibility SD:	18,41%
Mean ± uncertainty:	10,7 ± 1,3 ng/g	Repeatability SD:	1,6 ng/g
Reference value:	10,0 ng/g	Rel. repeatability SD:	15,10%

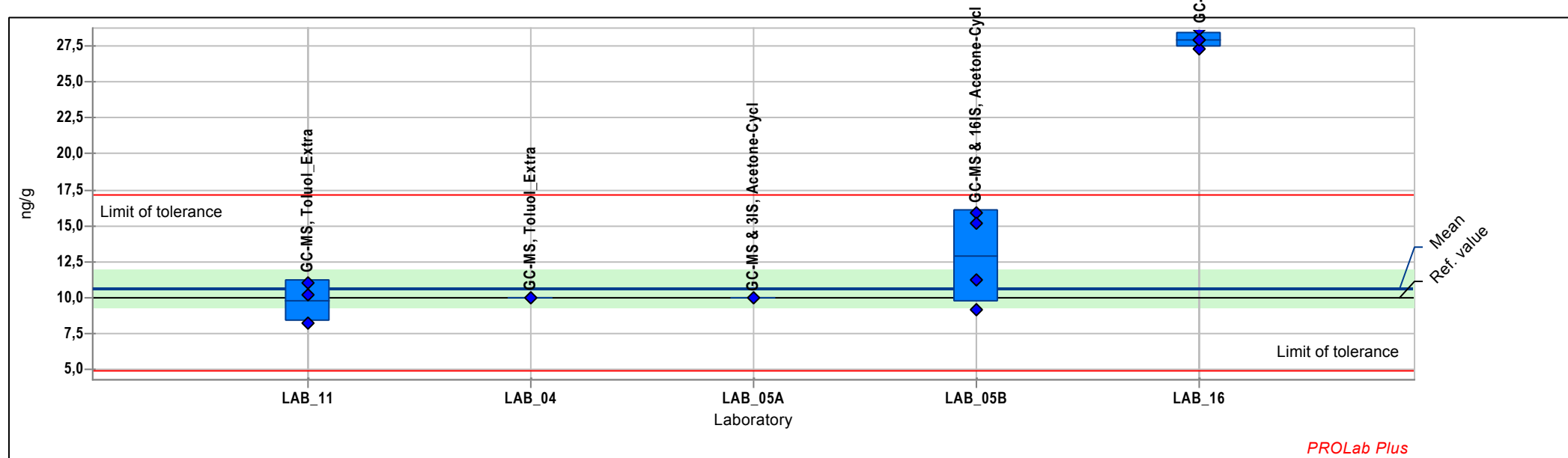


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC3
Parameter: PAH_Indeno[1,2,3-cd]pyrene
Mean ± uncertainty: 13,6 ± 9,0 ng/g
Reference value: 10,0 ng/g

Reproducibility SD: 10,2 ng/g
Rel. reproducibility SD: 74,97%
Repeatability SD: 2,2 ng/g
Rel. repeatability SD: 16,33%

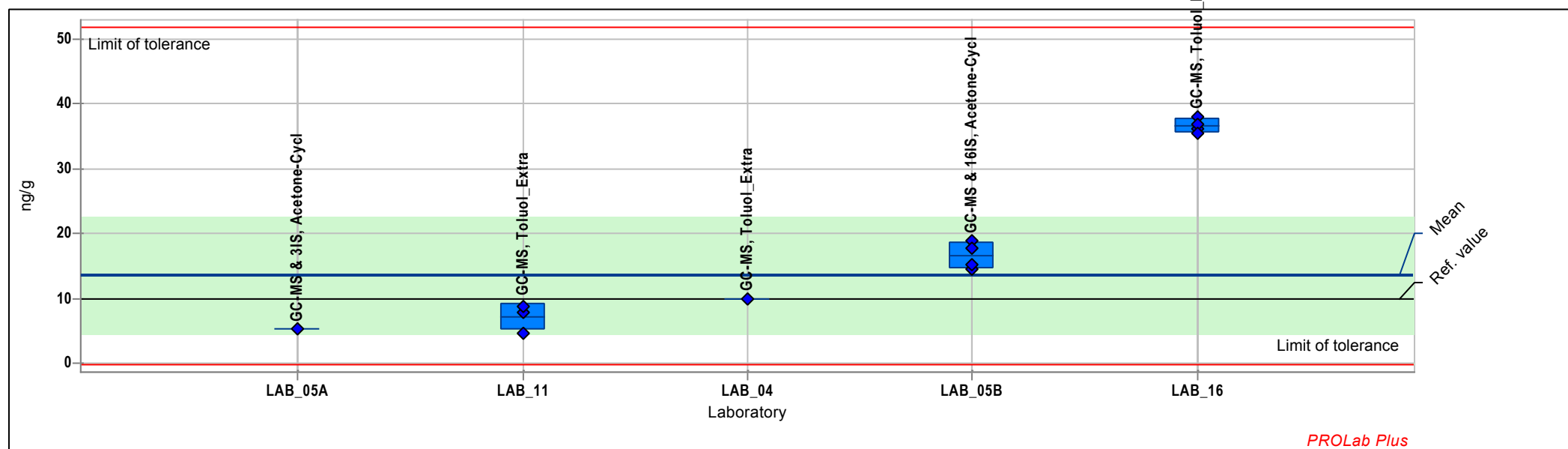


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC3
Parameter: PAH_Naphthalene
Mean ± uncertainty: 376 ± 74 ng/g
Reference value: 412 ng/g

Reproducibility SD: 94 ng/g
Rel. reproducibility SD: 25,01%
Repeatability SD: 33 ng/g
Rel. repeatability SD: 8,79%

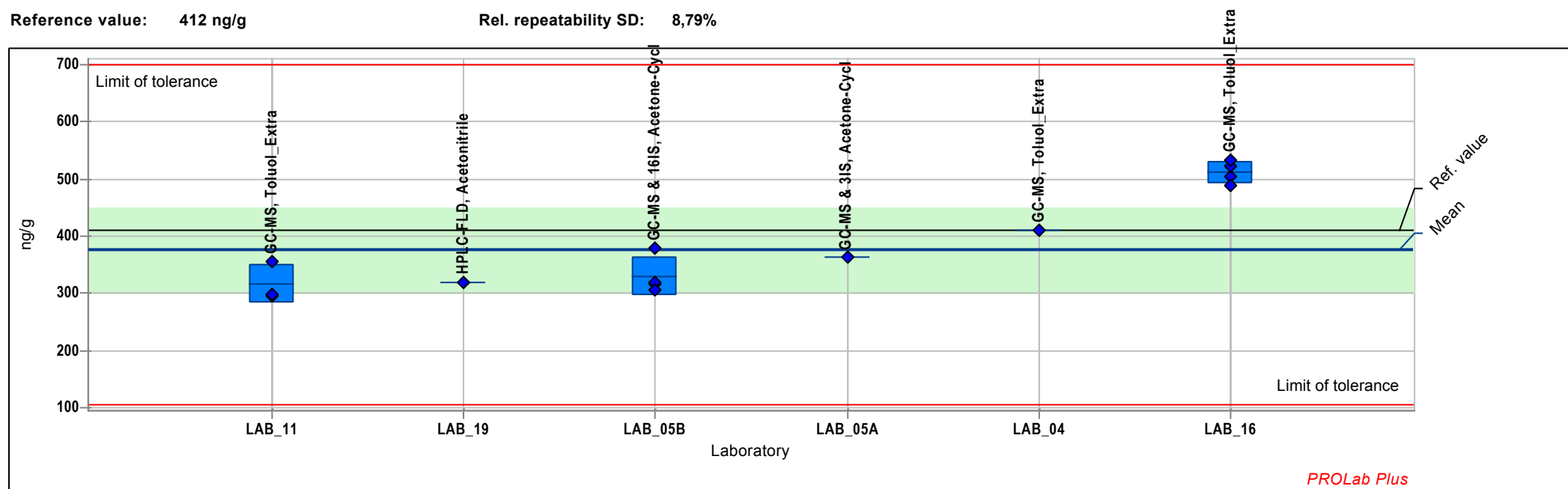


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	56,4 ng/g
Parameter:	PAH_Phenanthrene	Rel. reproducibility SD:	59,99%
Mean ± uncertainty:	94,0 ± 44,9 ng/g	Repeatability SD:	17,6 ng/g
Reference value:	82,0 ng/g	Rel. repeatability SD:	18,76%

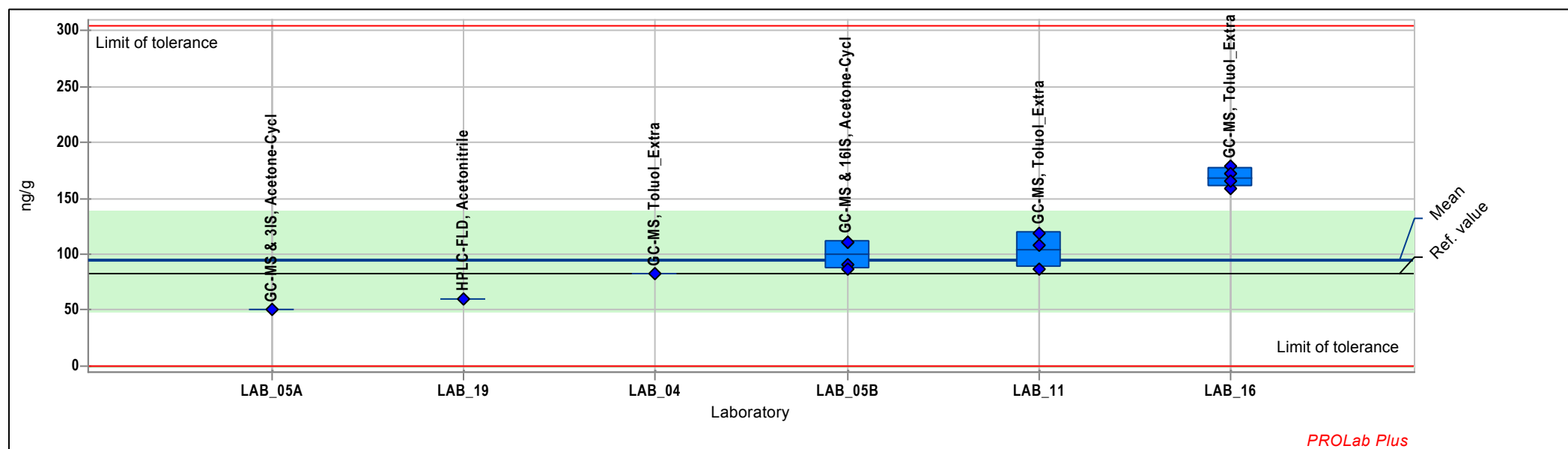


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	42,2 ng/g
Parameter:	PAH_Pyrene	Rel. reproducibility SD:	68,76%
Mean ± uncertainty:	61,4 ± 37,5 ng/g	Repeatability SD:	5,7 ng/g
Reference value:	93,0 ng/g	Rel. repeatability SD:	9,24%

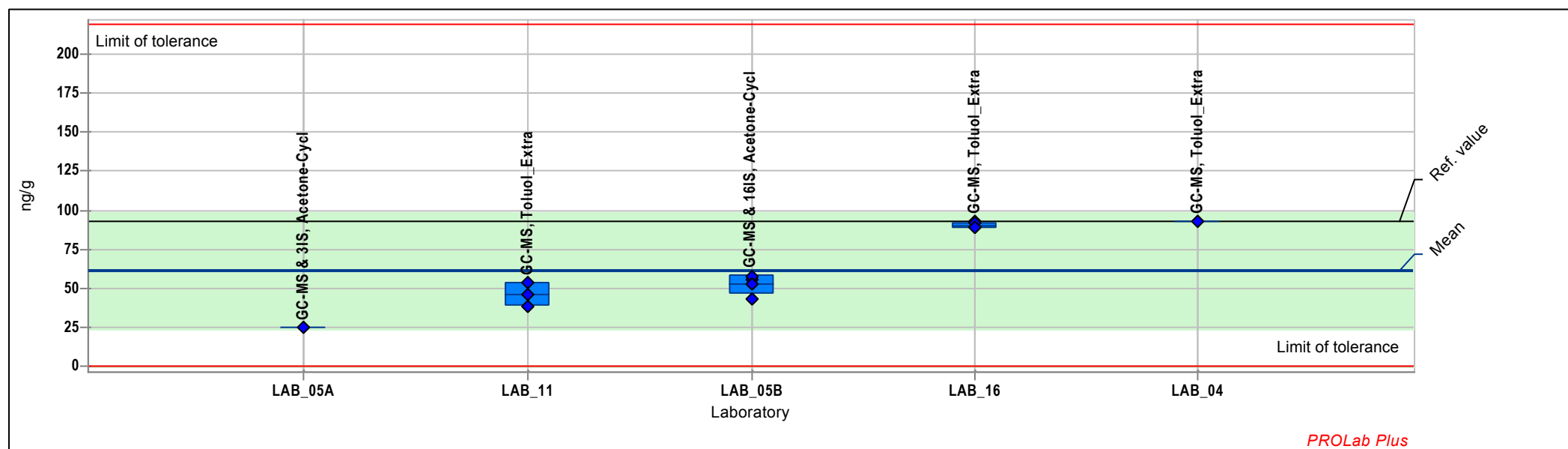


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC3
Parameter: Pb
Mean ± uncertainty: 135,75 ± 21,93 mg/kg
Reference value: 170,00 mg/kg
Reproducibility SD: 31,04 mg/kg
Rel. reproducibility SD: 22,86%
Repeatability SD: 1,73 mg/kg
Rel. repeatability SD: 1,28%

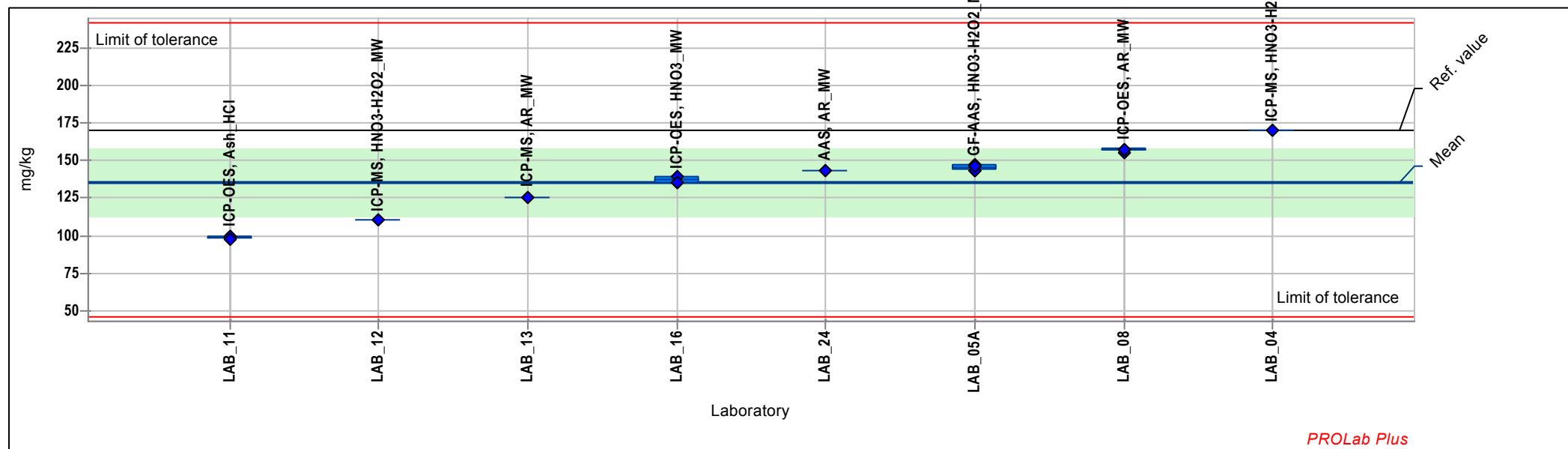


Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	0,47
Parameter:	pH	Rel. reproducibility SD:	6,64%
Mean ± uncertainty:	7,09 ± 0,22	Repeatability SD:	0,06
Reference value:	7,10	Rel. repeatability SD:	0,86%

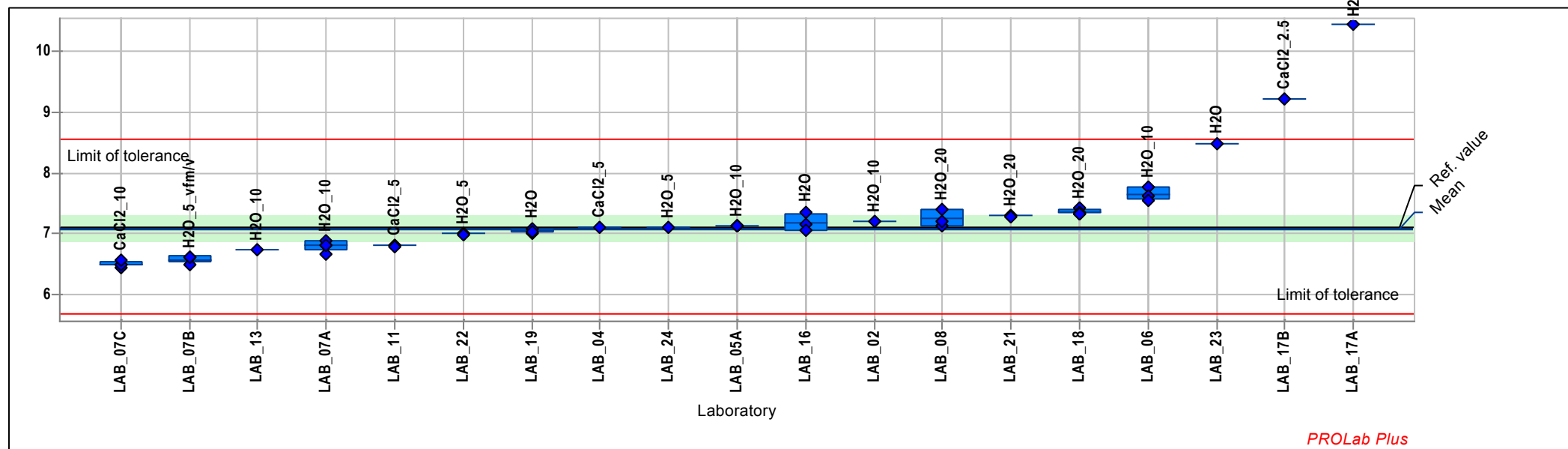


Figure S1

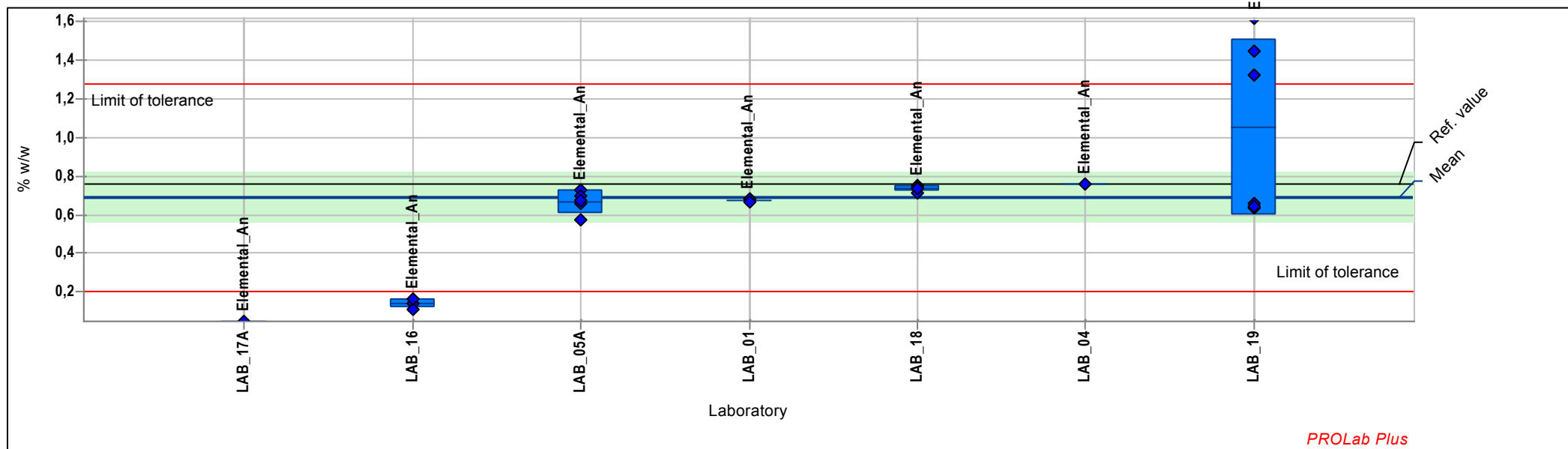
Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC3
Parameter: S
Mean ± uncertainty: 0,691 ± 0,127 % w/w
Reference value: 0,760 % w/w

Reproducibility SD: 0,170 % w/w
Rel. reproducibility SD: 24,56%
Repeatability SD: 0,027 % w/w
Rel. repeatability SD: 3,94%



PROLab Plus

Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample:	BC3	Reproducibility SD:	0,170 % w/w
Parameter:	S_ICP-OES	Rel. reproducibility SD:	29,34%
Mean ± uncertainty:	0,580 ± 0,152 % w/w	Repeatability SD:	0,011 % w/w
Reference value:	0,716 % w/w	Rel. repeatability SD:	1,84%

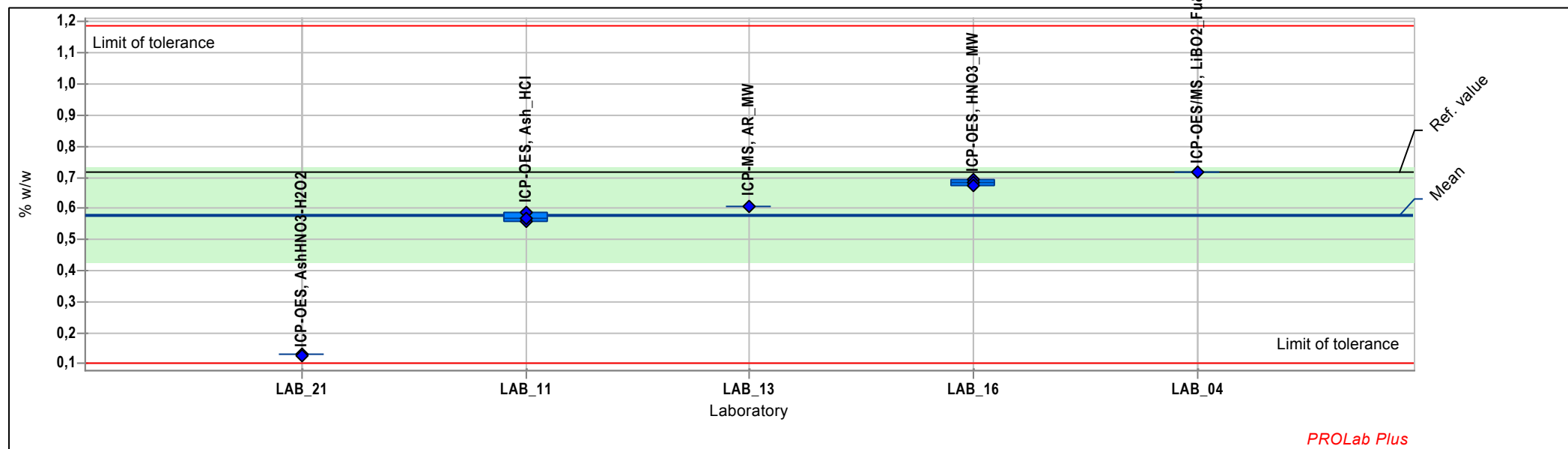


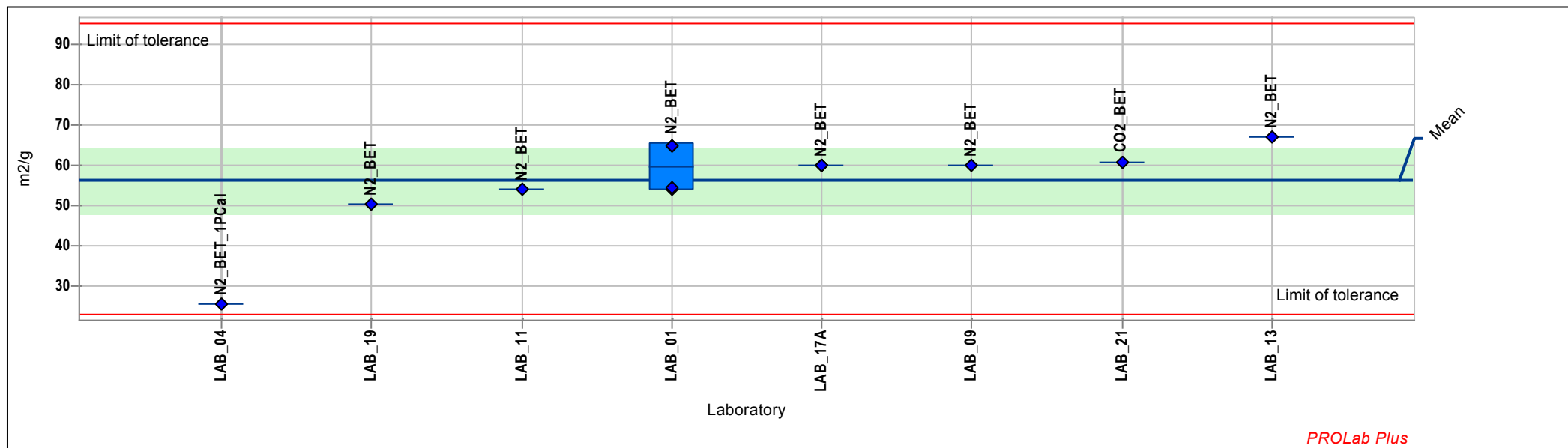
Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC3
Parameter: Specific_surface_area
Mean ± uncertainty: 56,5 ± 8,2 m2/g
Reference value:
Reproducibility SD: 11,5 m2/g
Rel. reproducibility SD: 20,41%
Repeatability SD: 0,2 m2/g
Rel. repeatability SD: 0,43%



PROLab Plus

Figure S1

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Box plot of the laboratory results

Sample: BC3
Parameter: Zn
Mean ± uncertainty: 2047,8 ± 509,3 mg/kg
Reference value: 3000,0 mg/kg

Reproducibility SD: 805,8 mg/kg
Rel. reproducibility SD: 39,35%
Repeatability SD: 39,3 mg/kg
Rel. repeatability SD: 1,92%

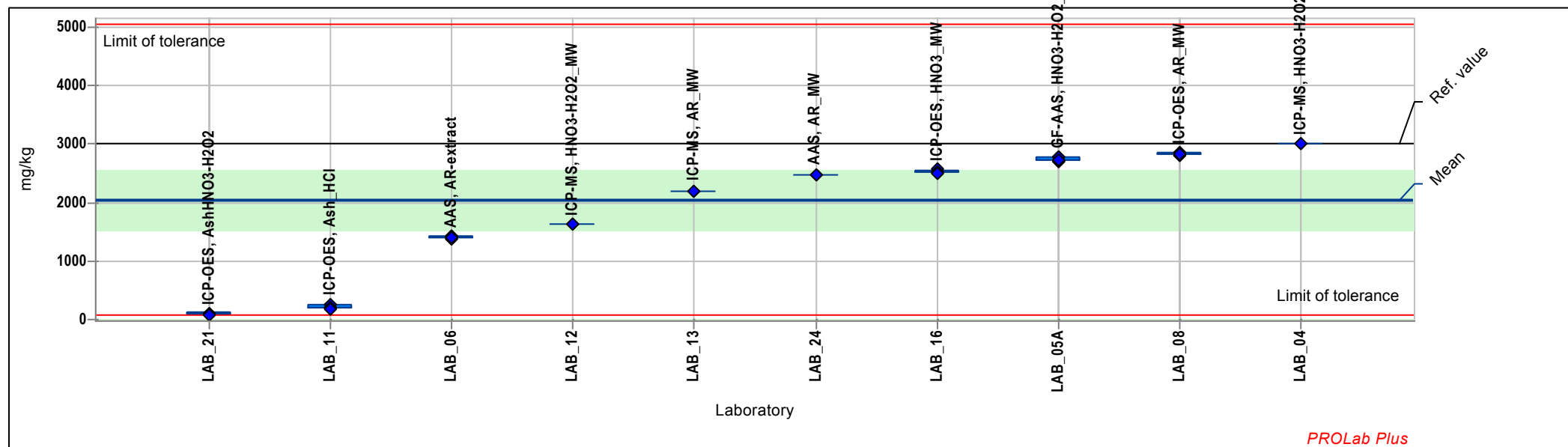


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1



Kernel density plot

Sample: BC1
Parameter: Ash

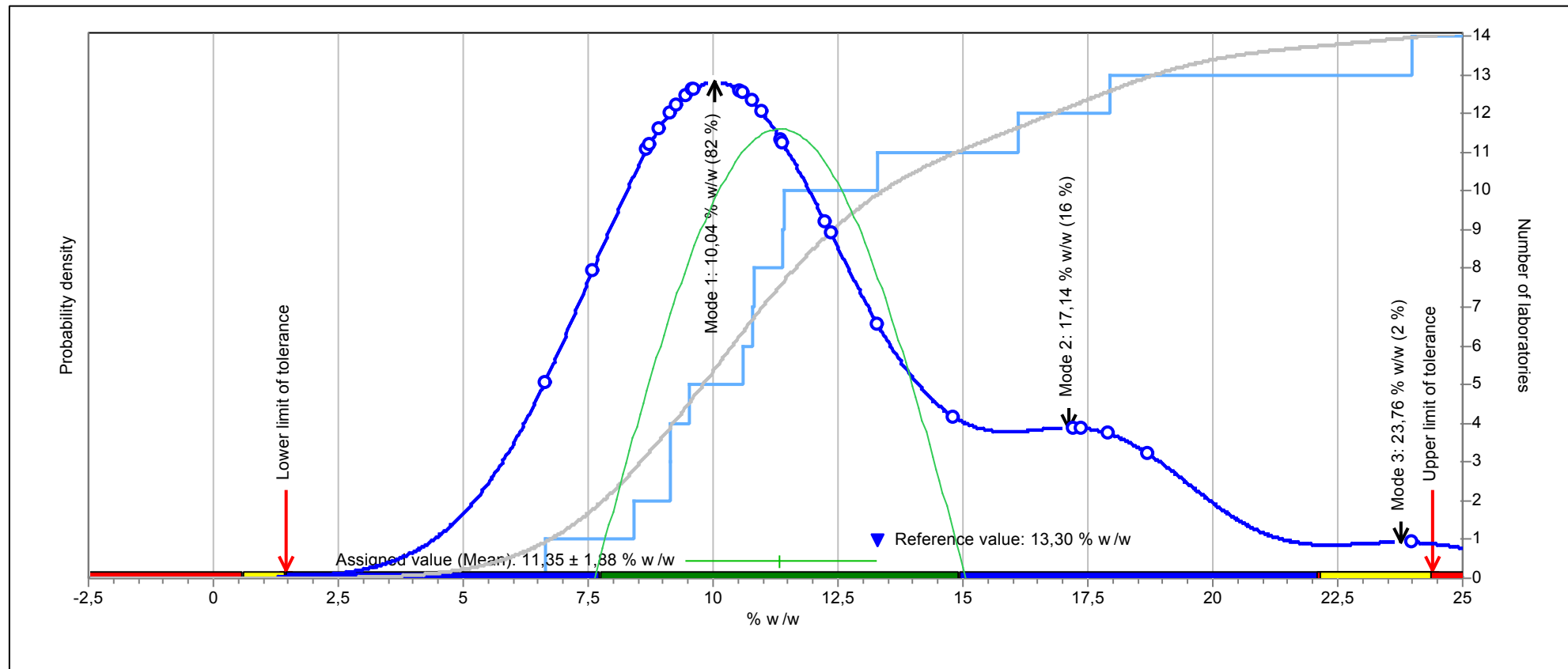


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: C

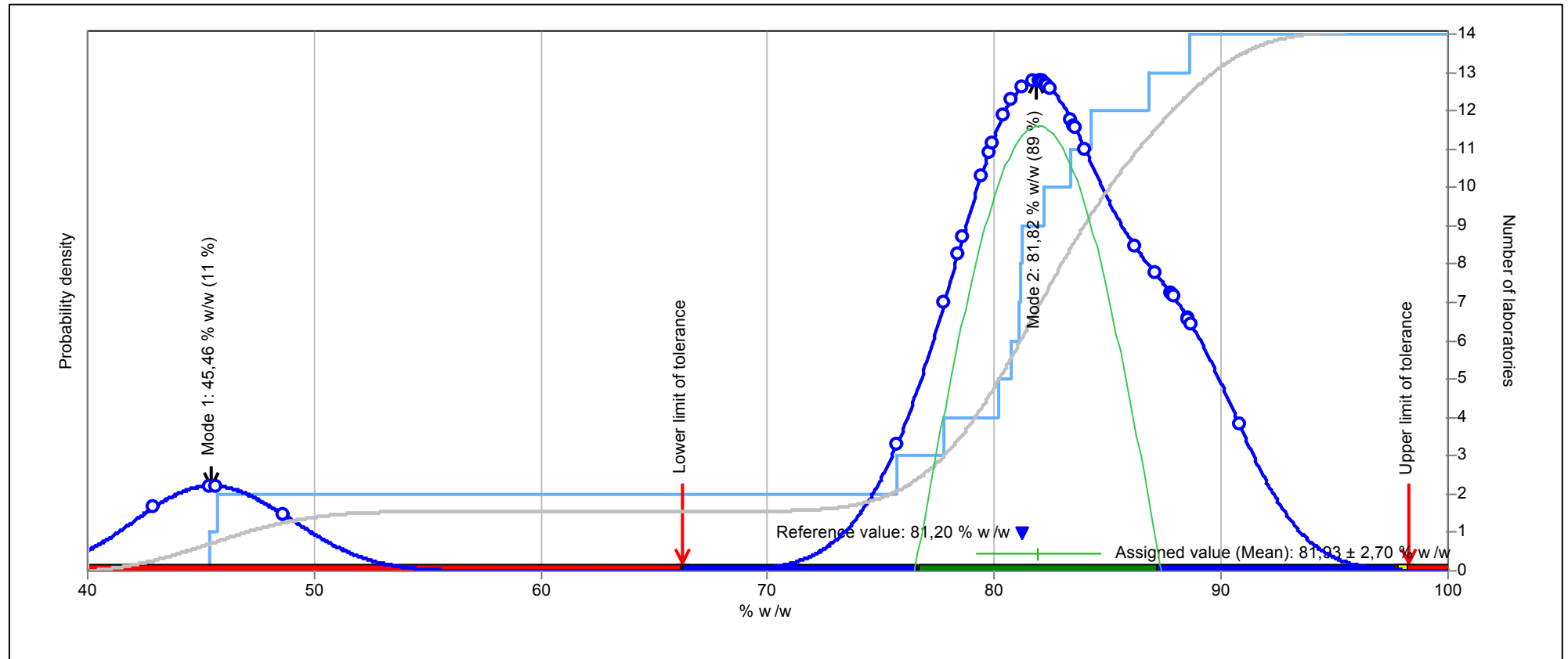


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: Ca

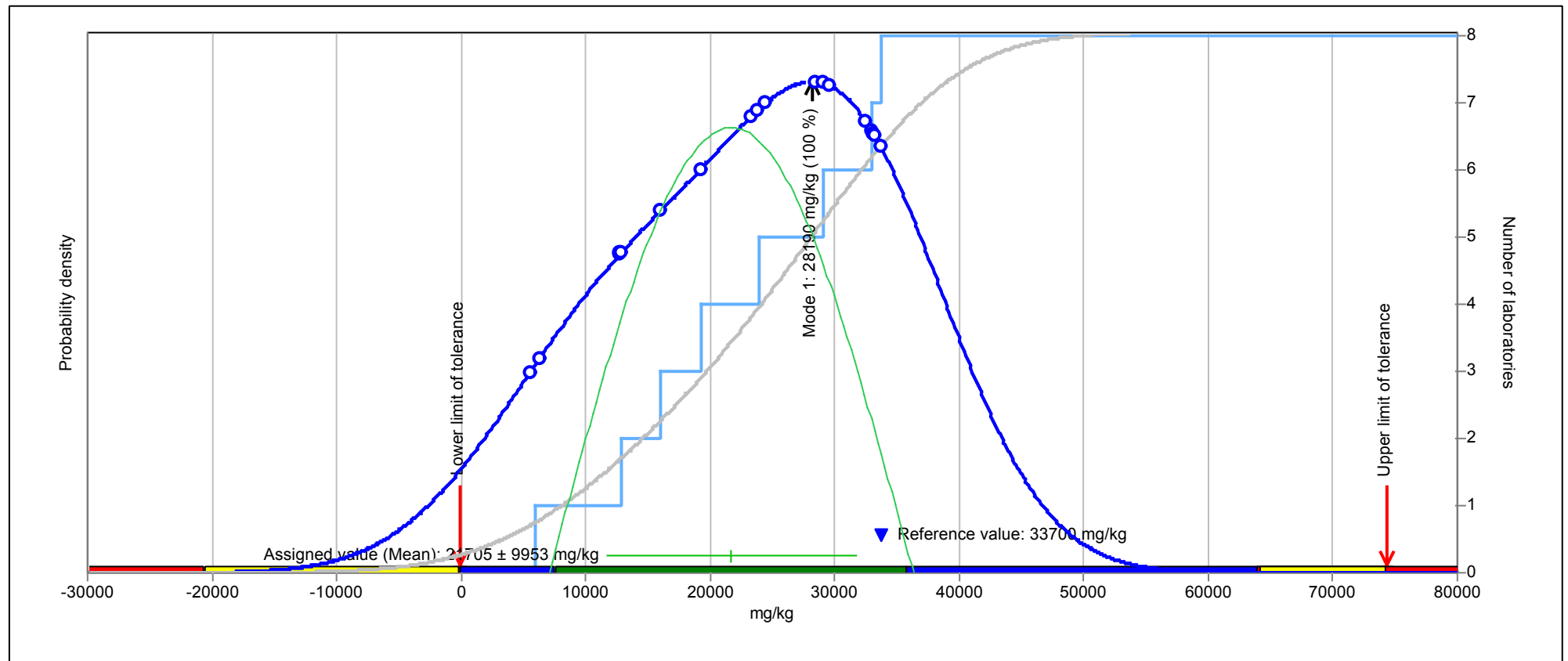


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: Cd

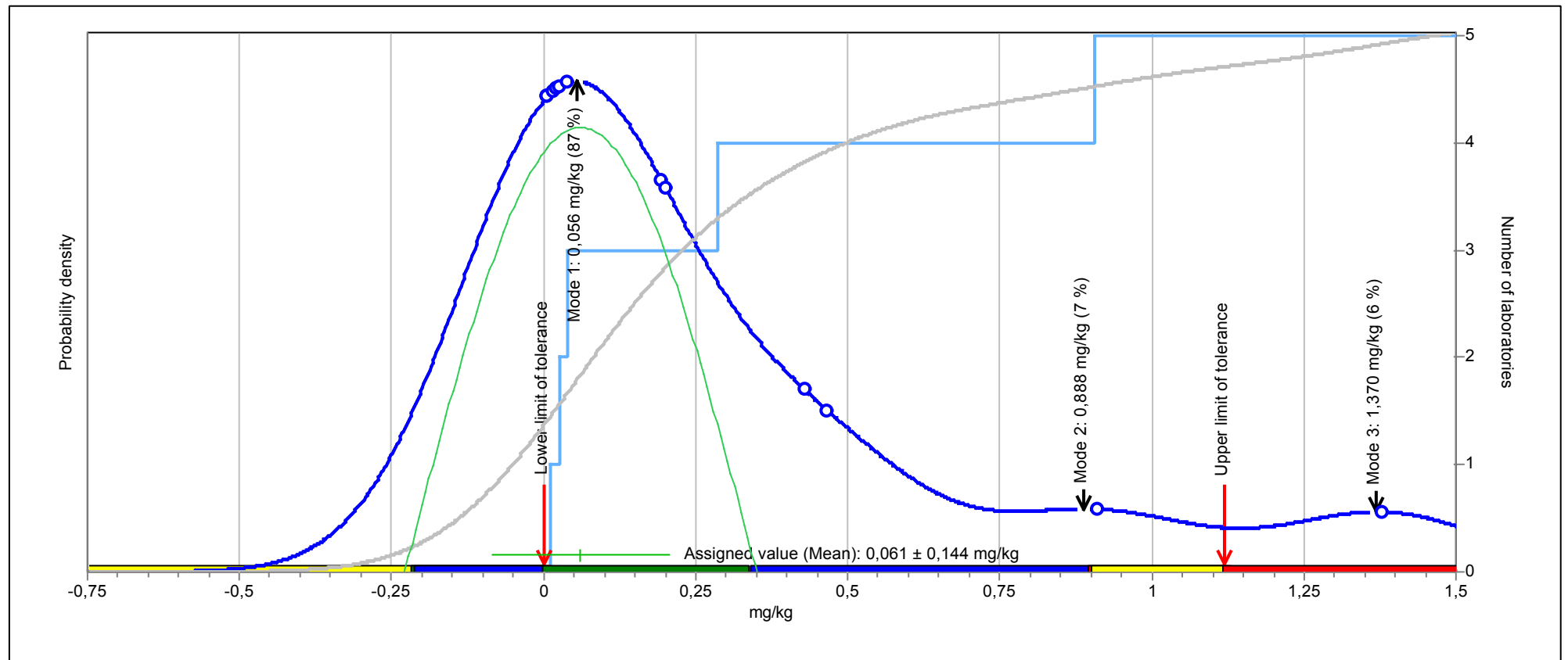


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: Cr

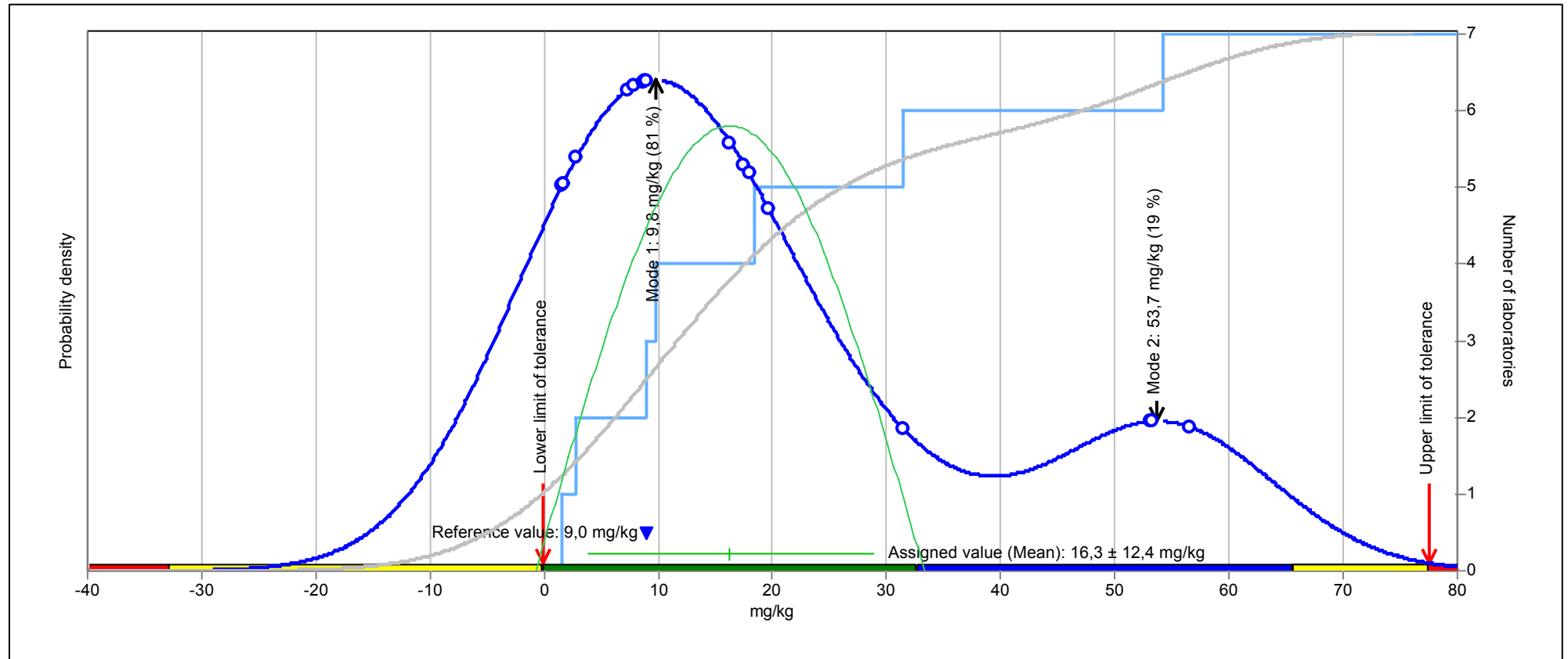


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: Cu

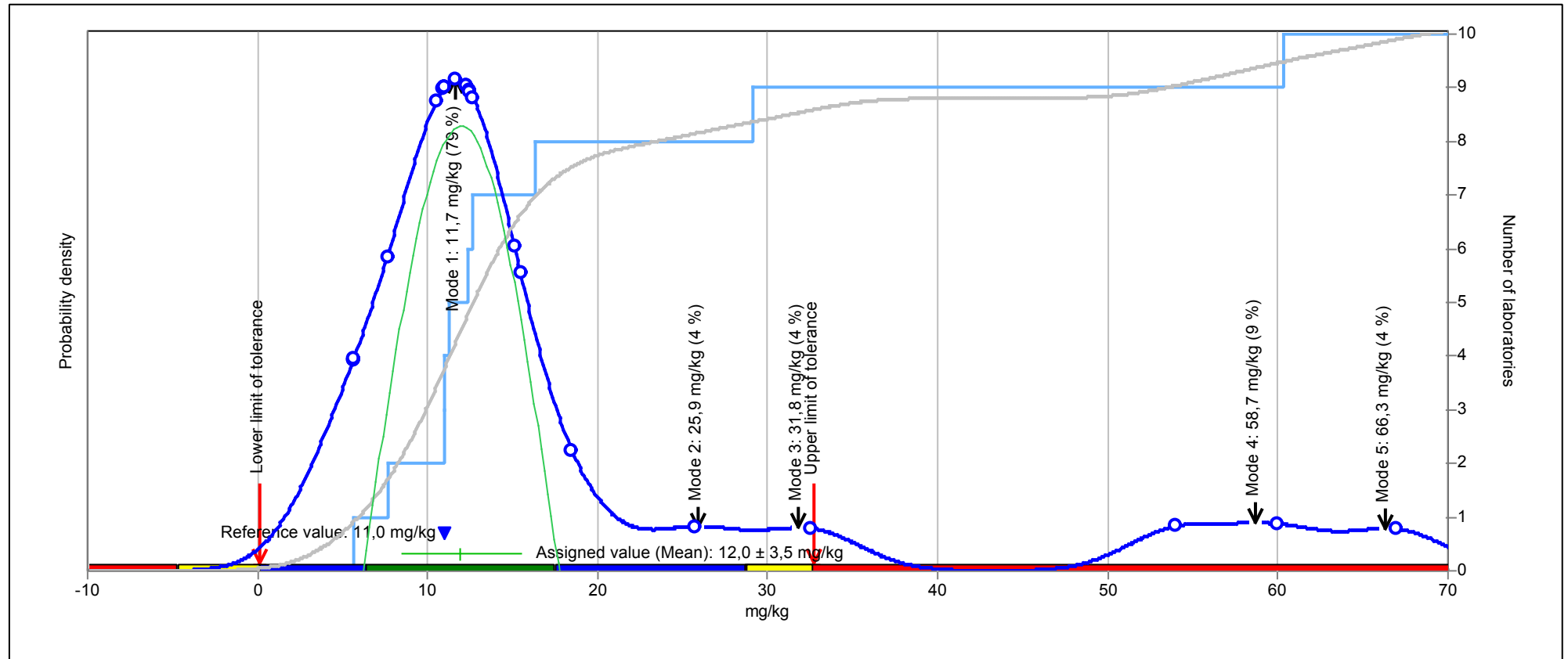


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: EC

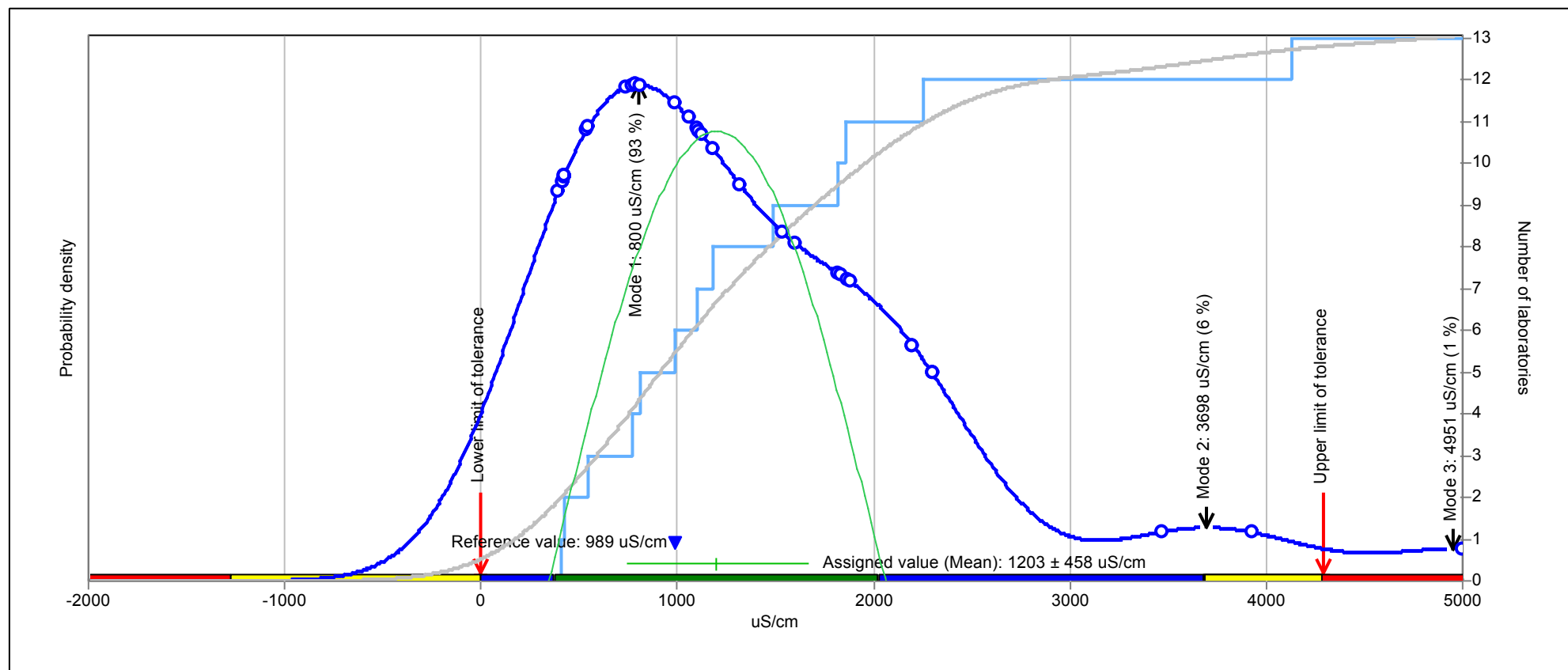


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: Fe

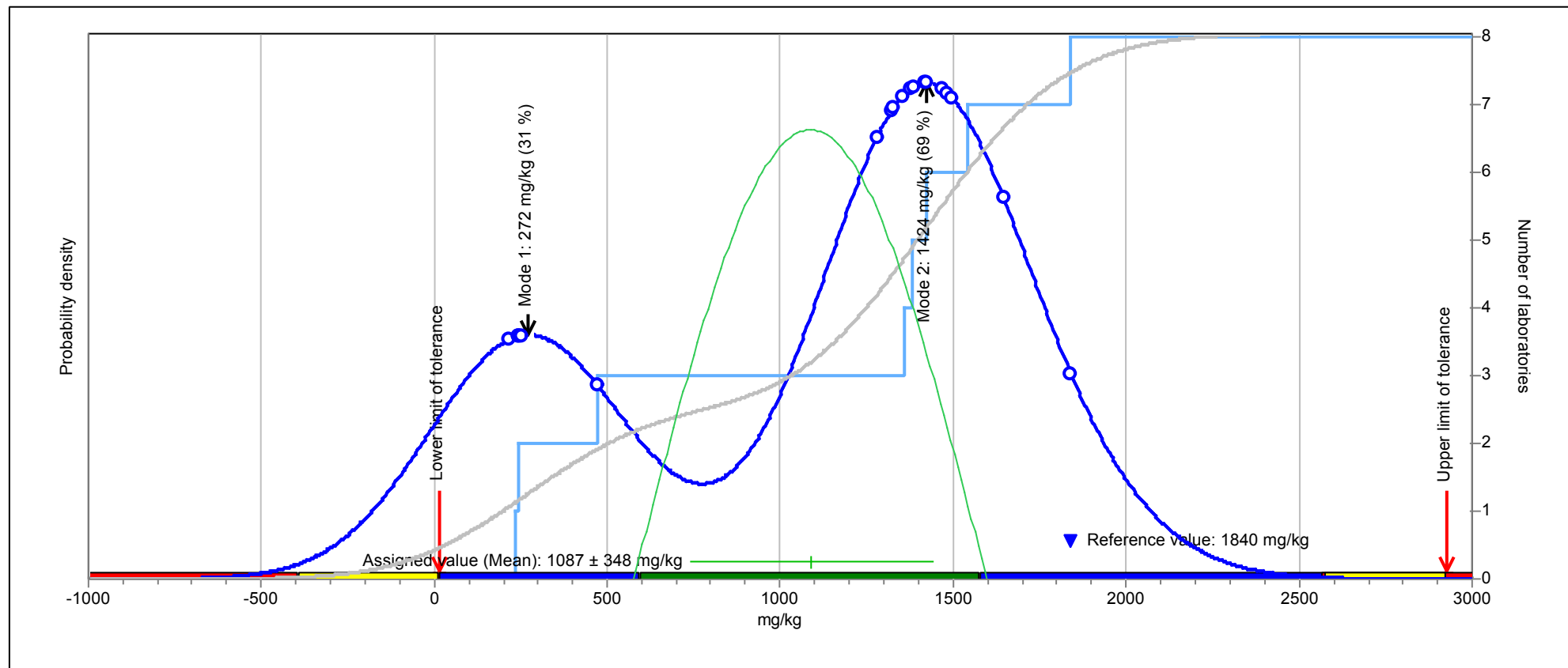


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: H

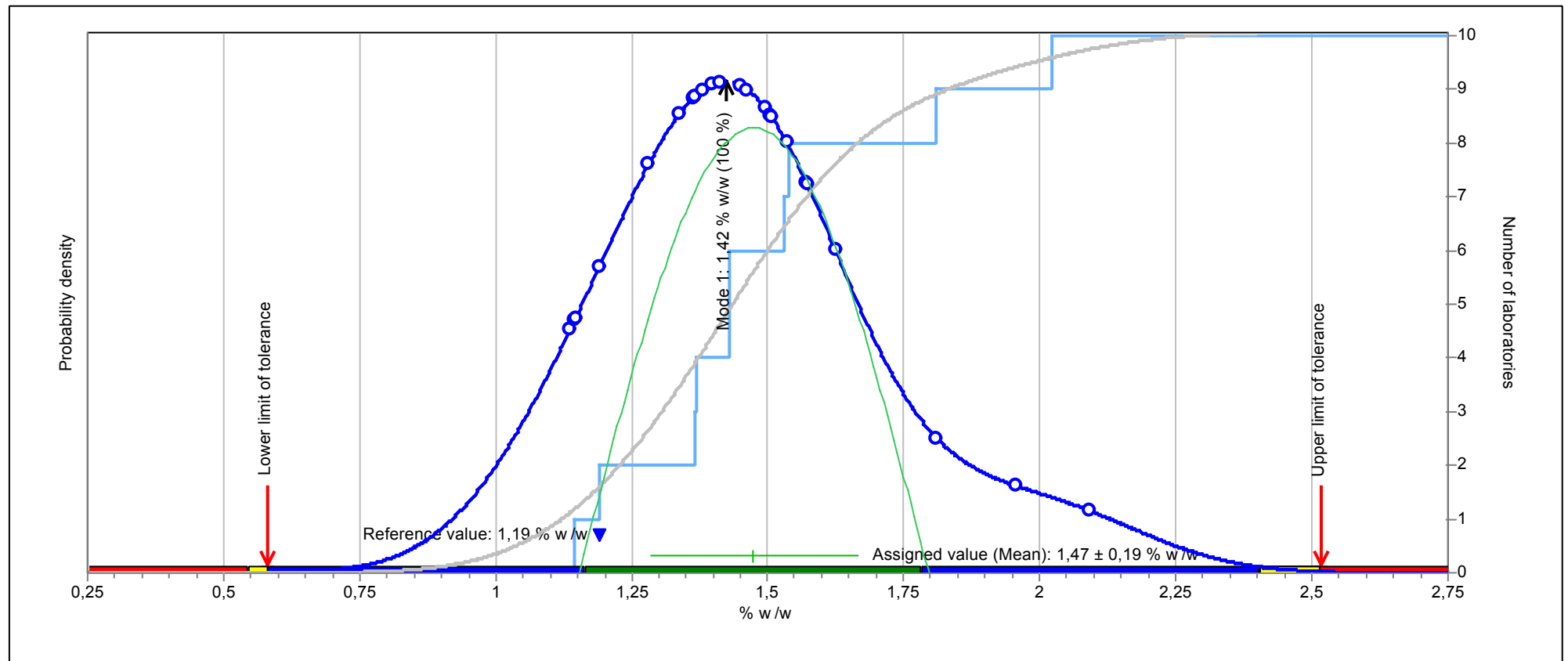


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: K

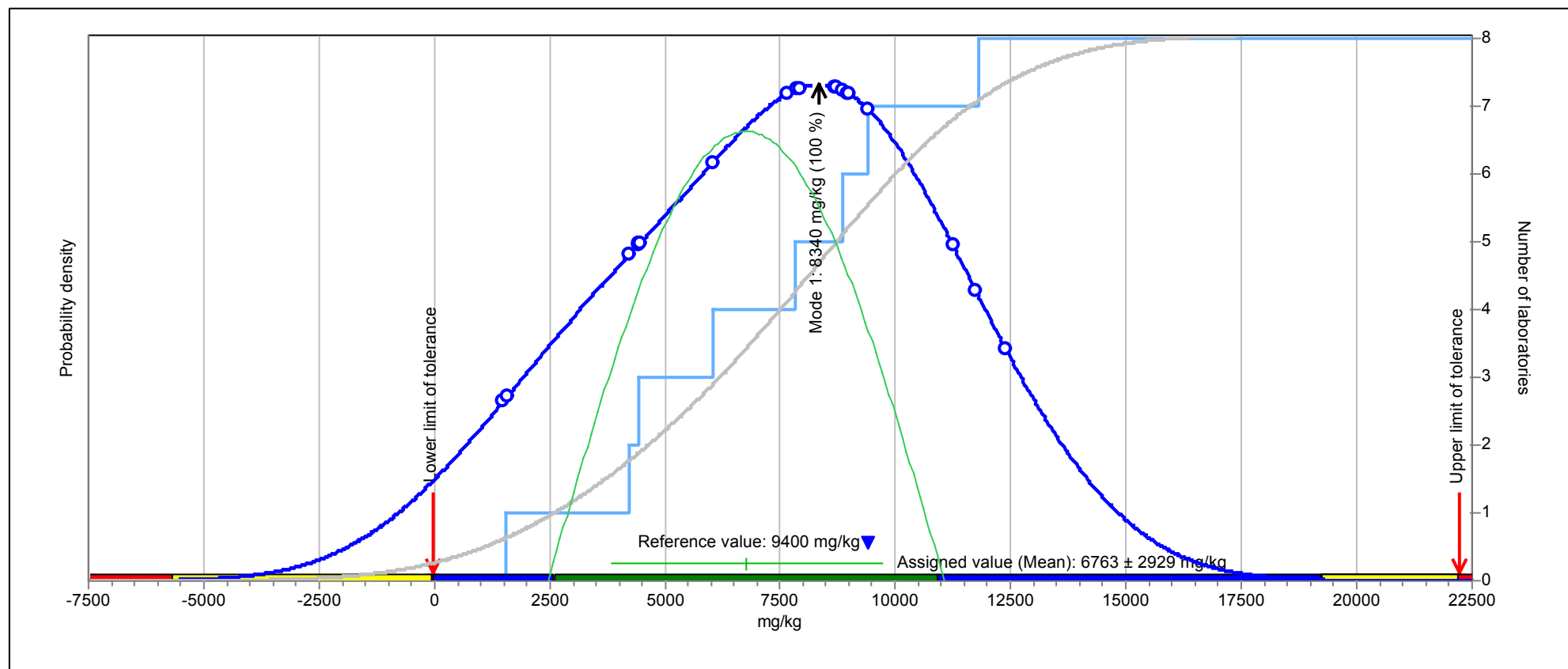


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: Mg

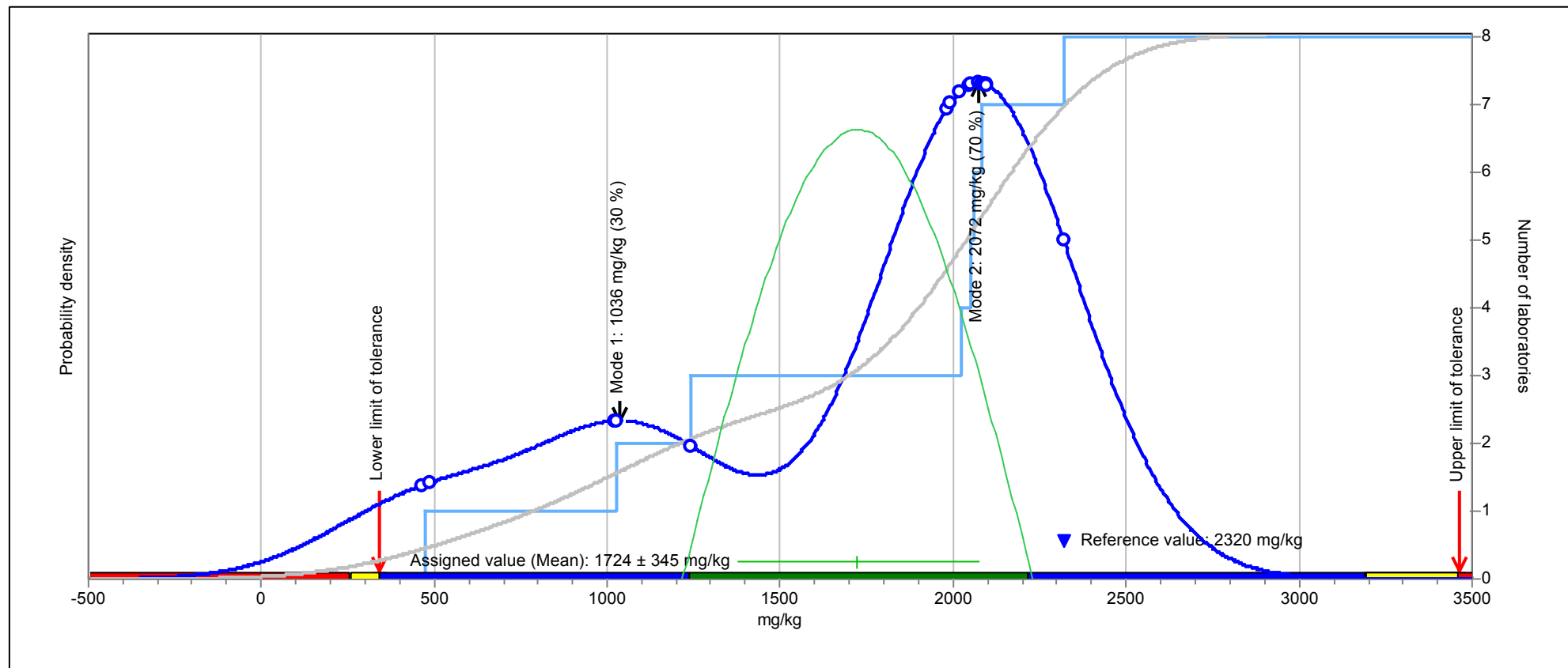


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: Mn

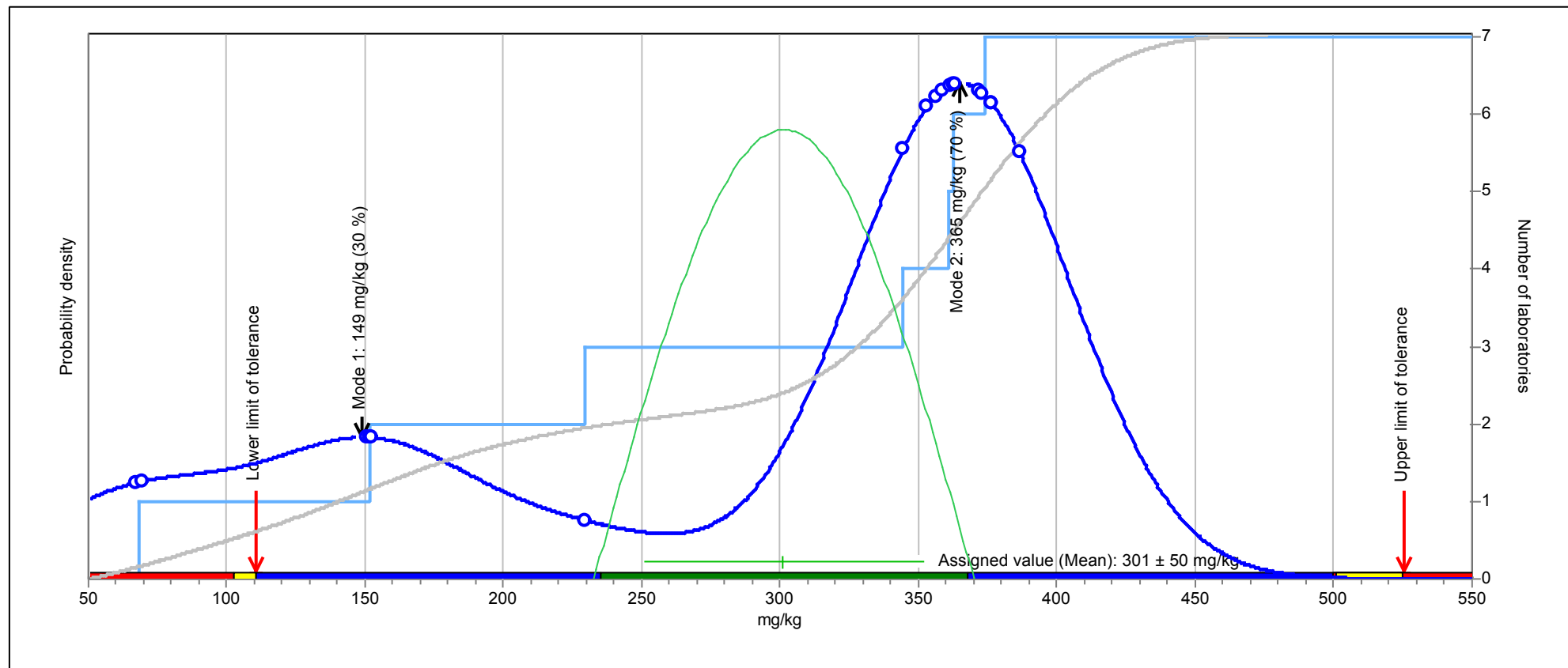


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: N

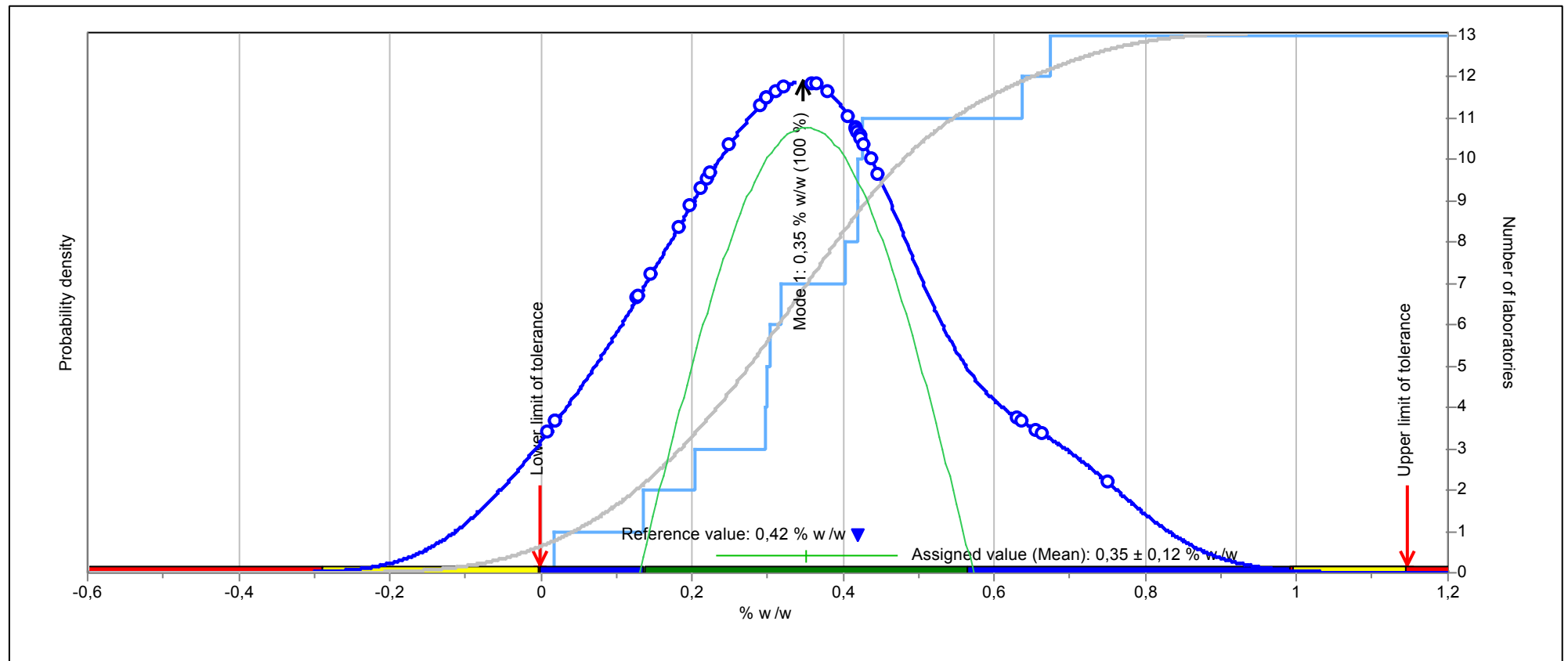


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: Na

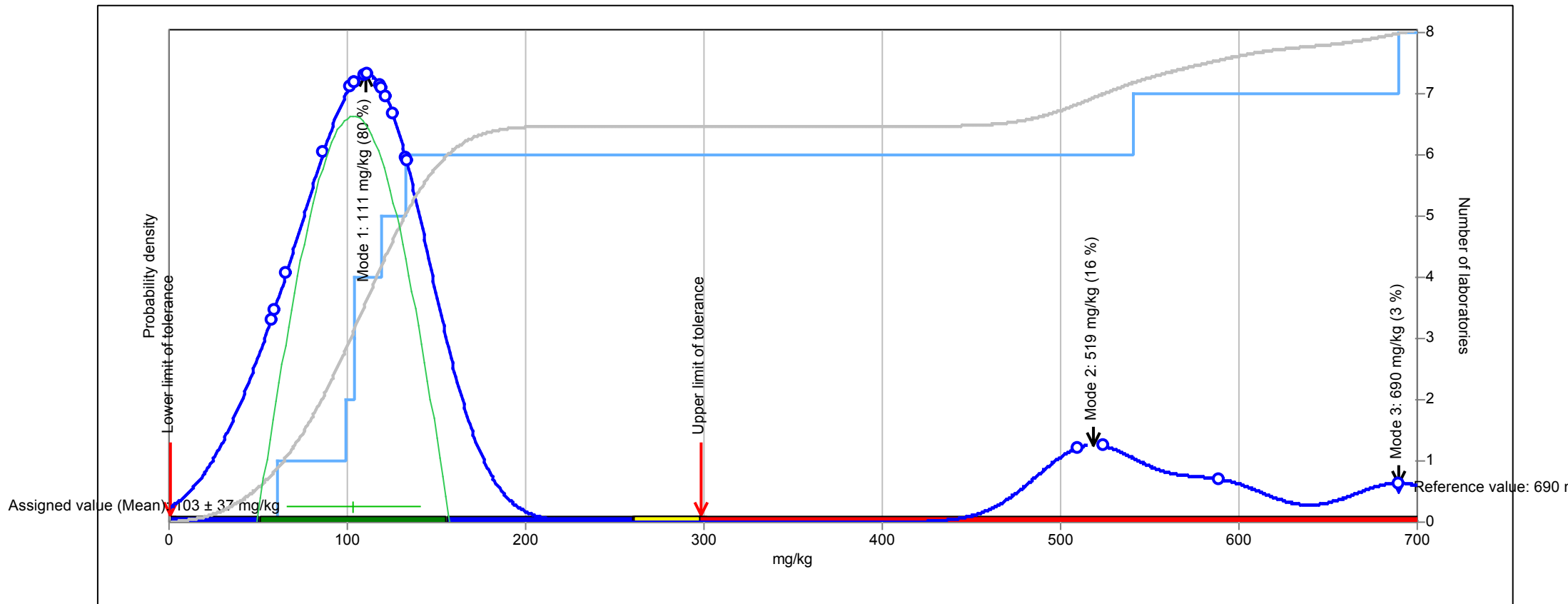


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: Ni

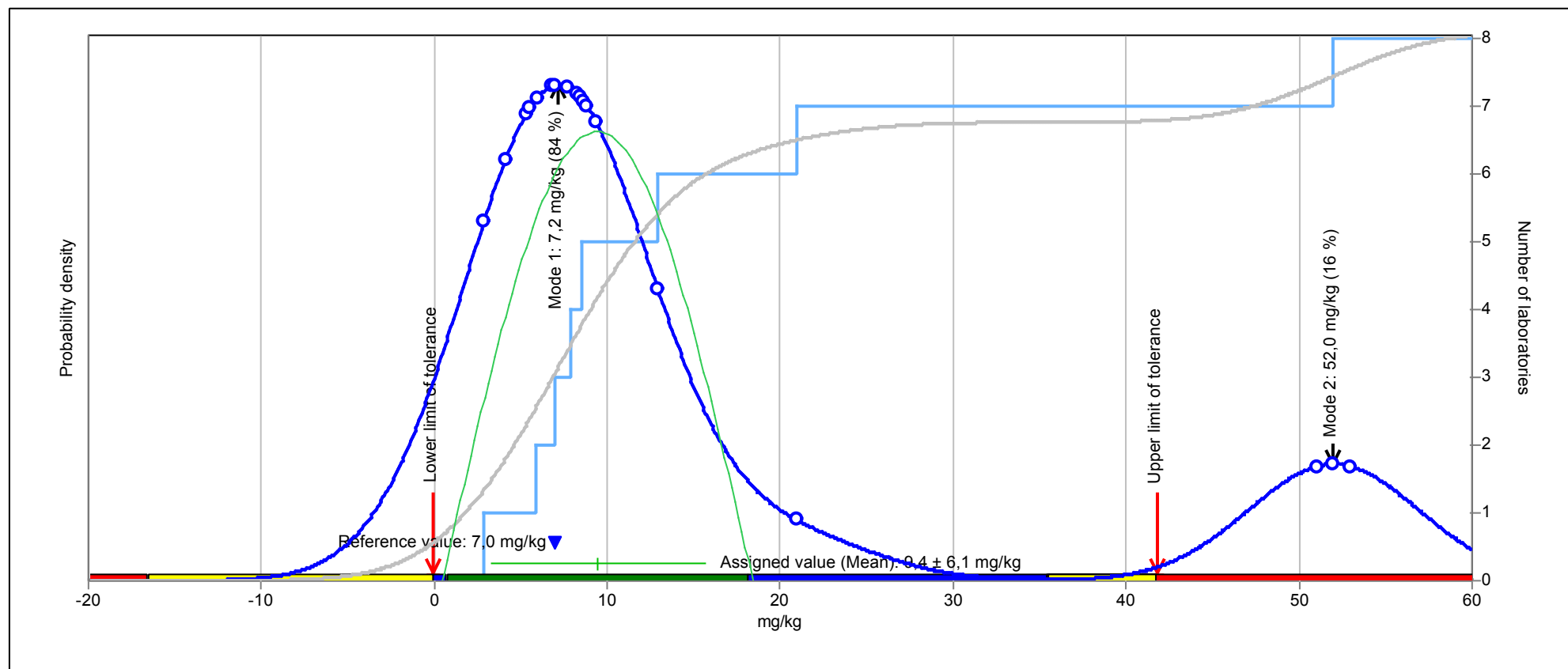


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: O

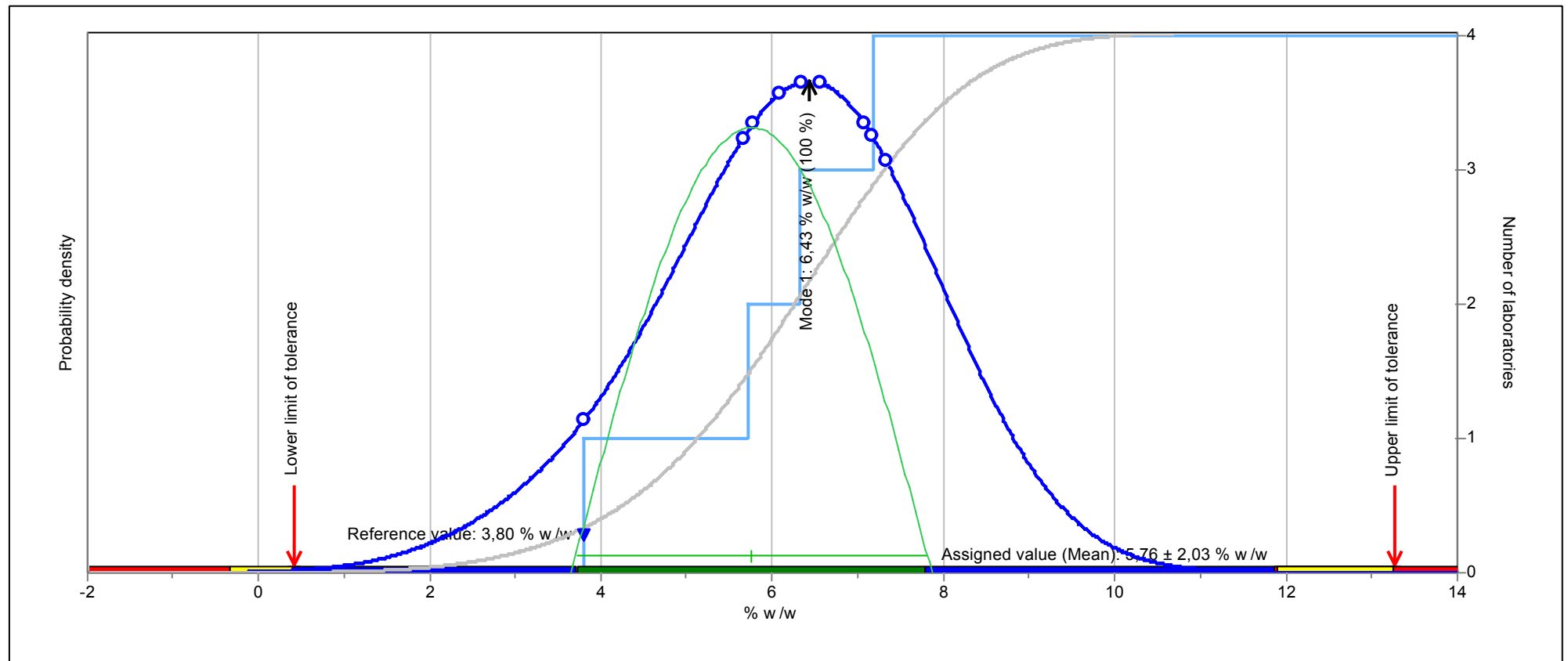


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: P

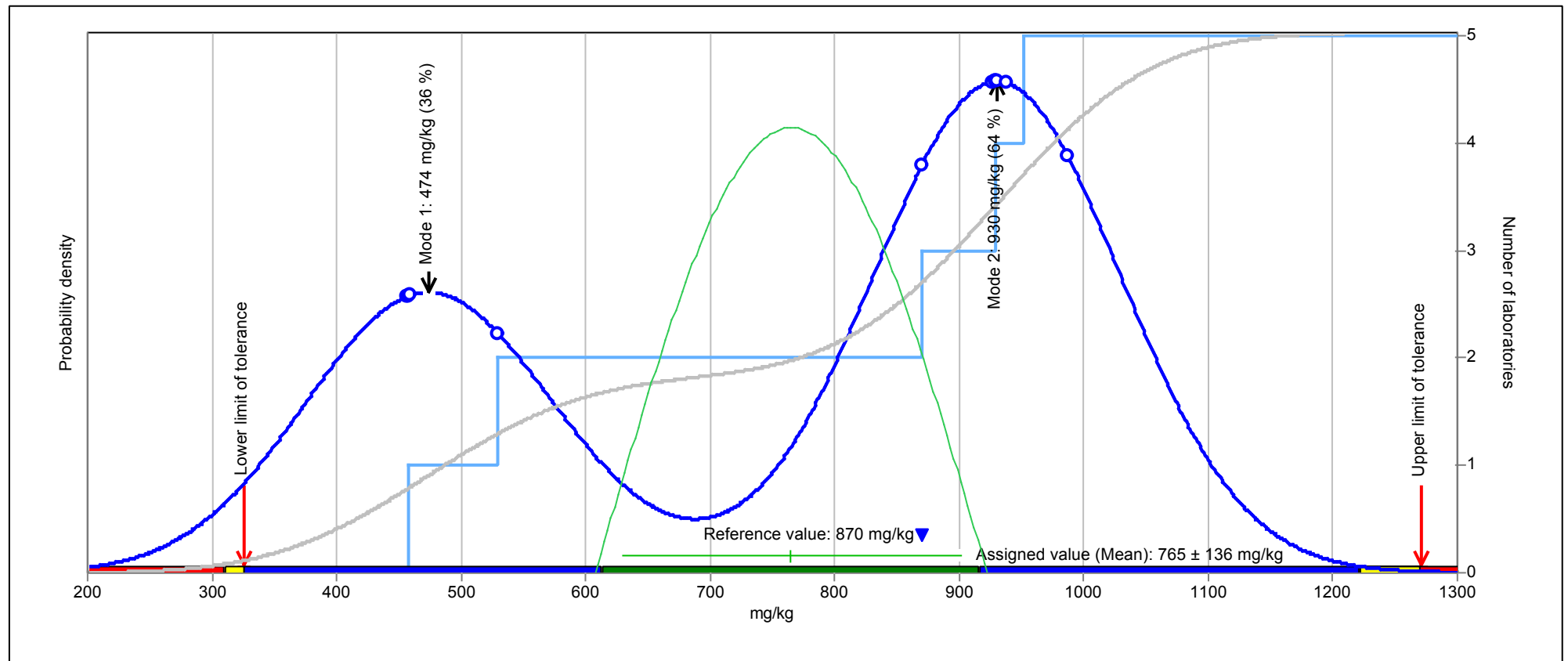


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Sum

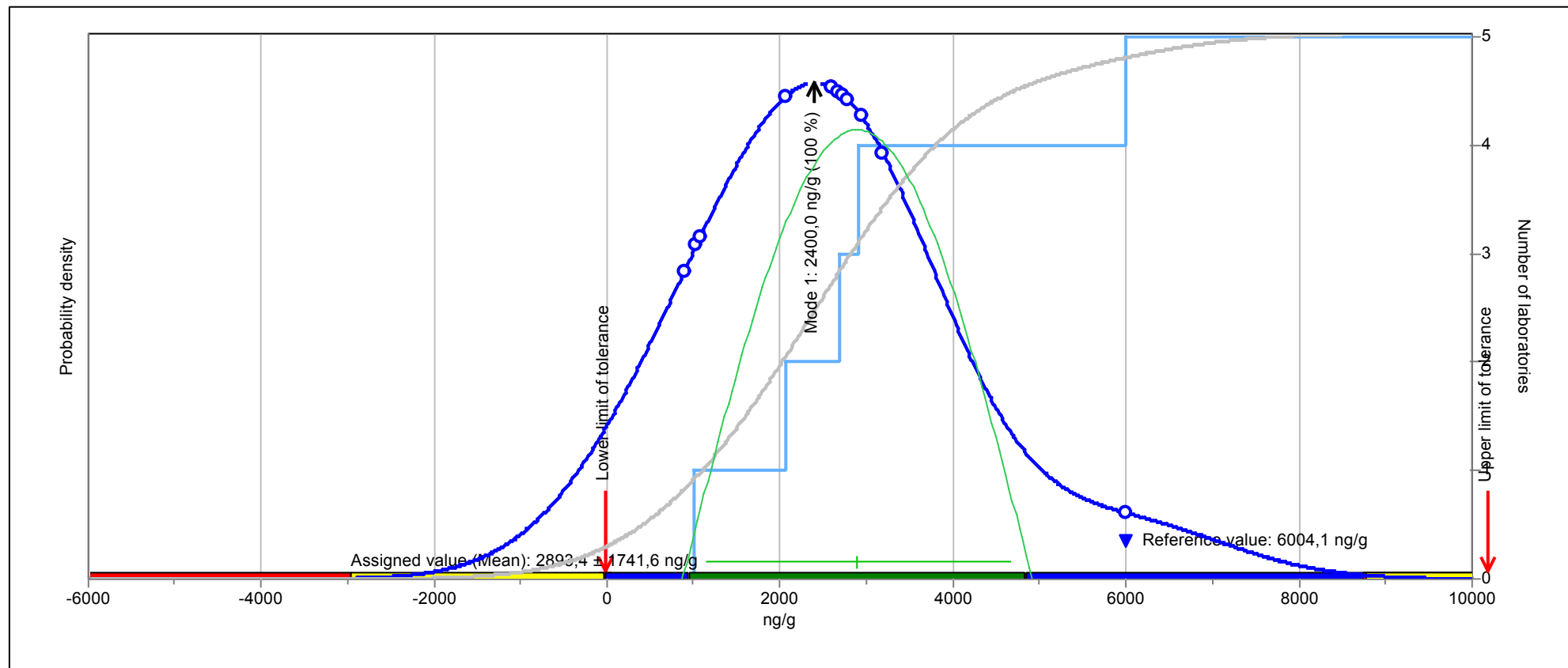


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Acenaphthene

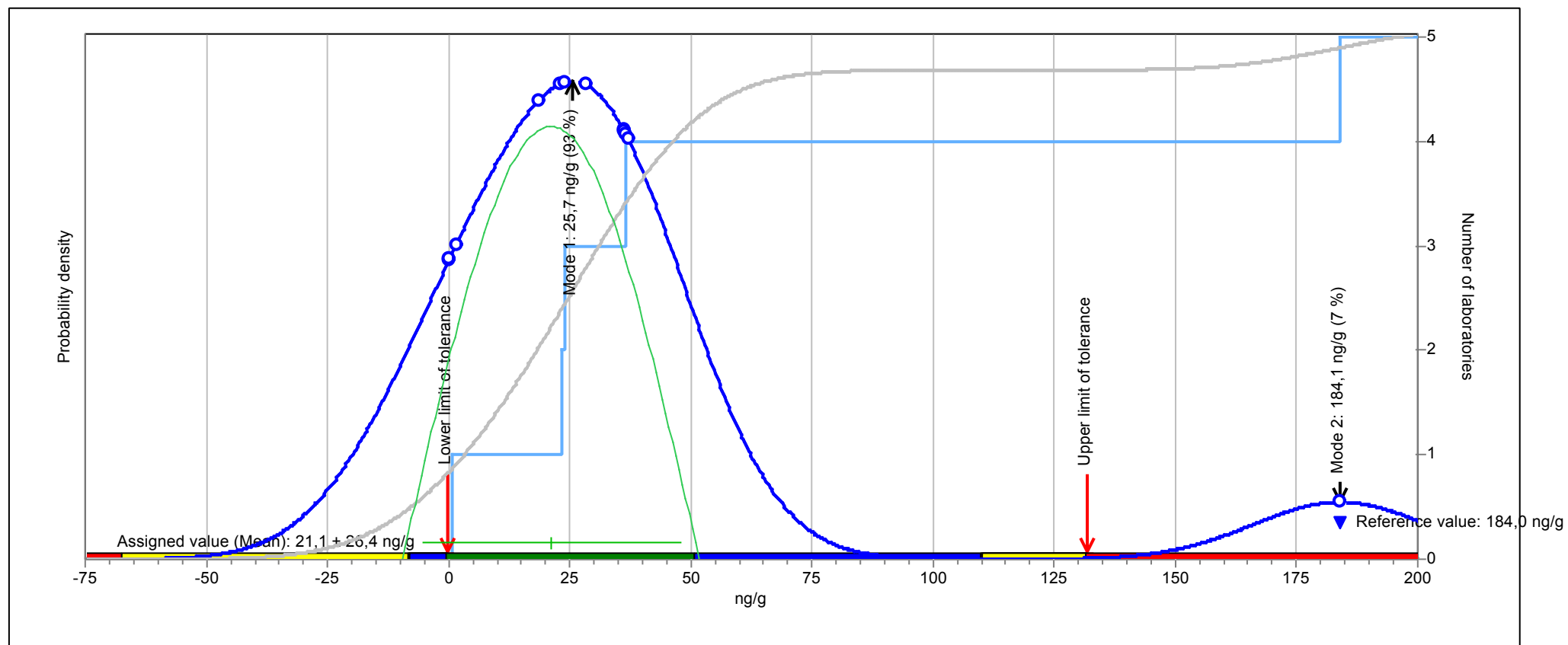


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Acenaphthylene

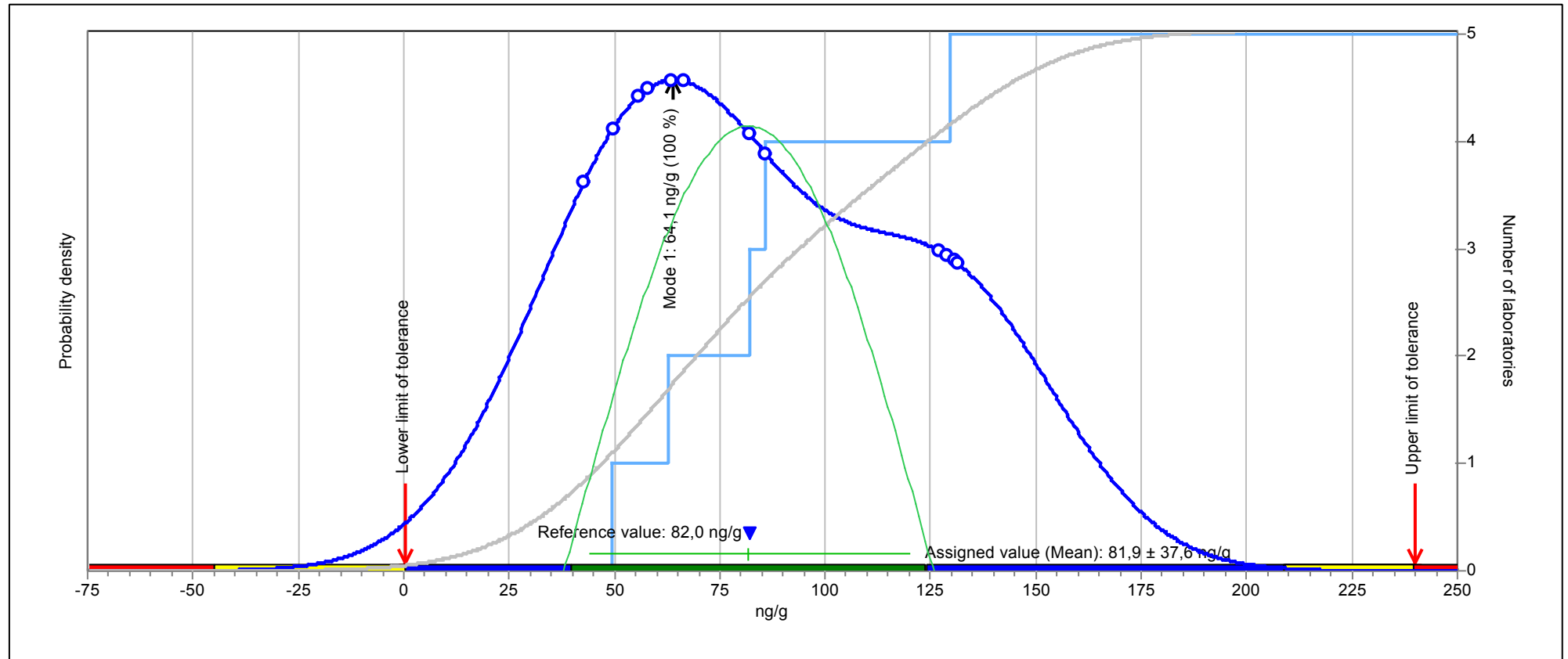


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Anthracene

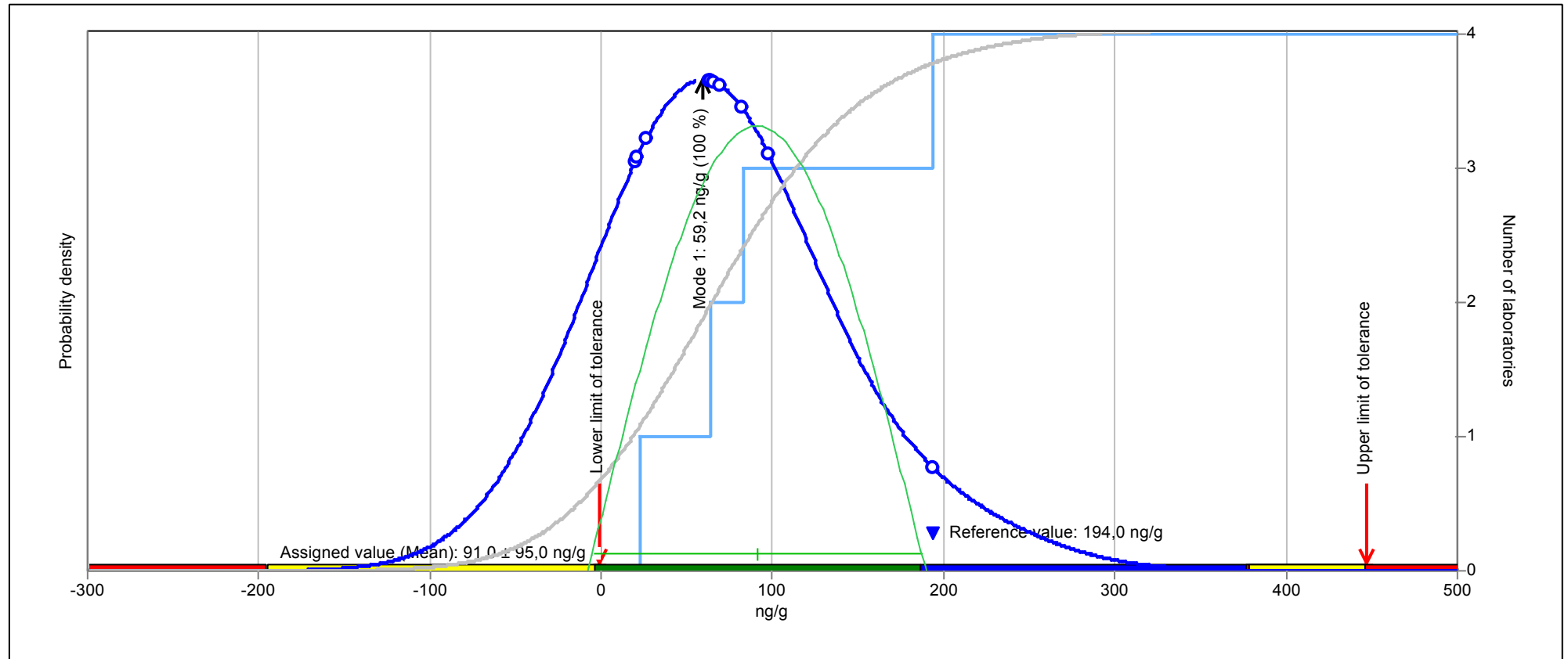


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Benzo[a]anthracene

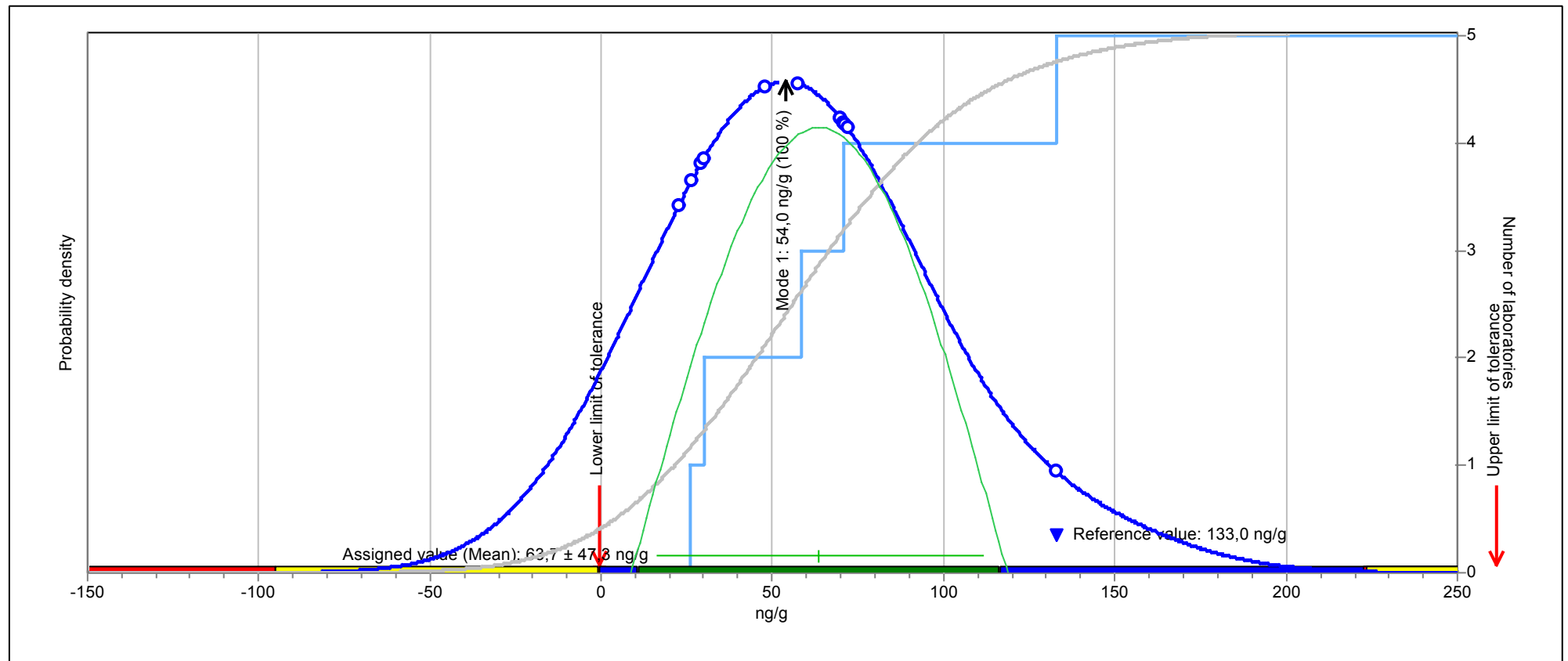


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Benzo[a]pyrene

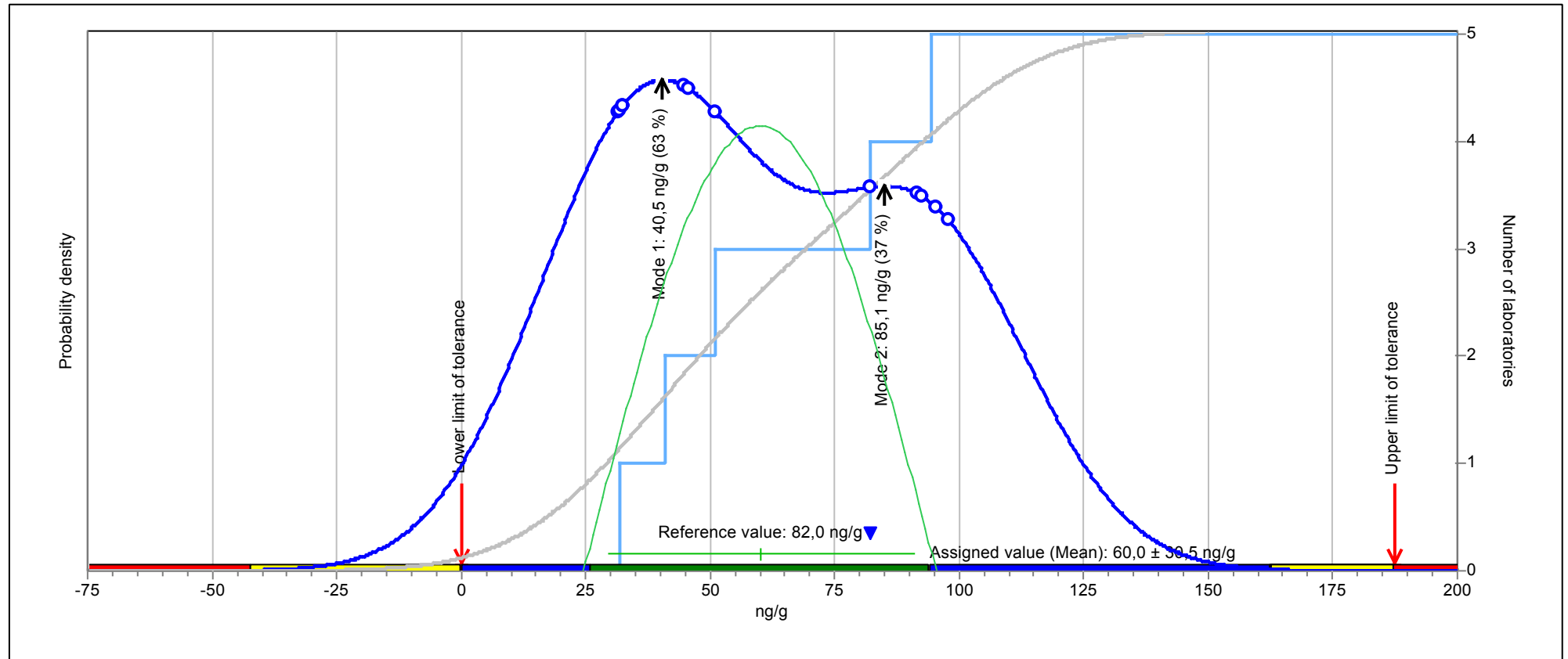


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Benzo[b]fluoranthene

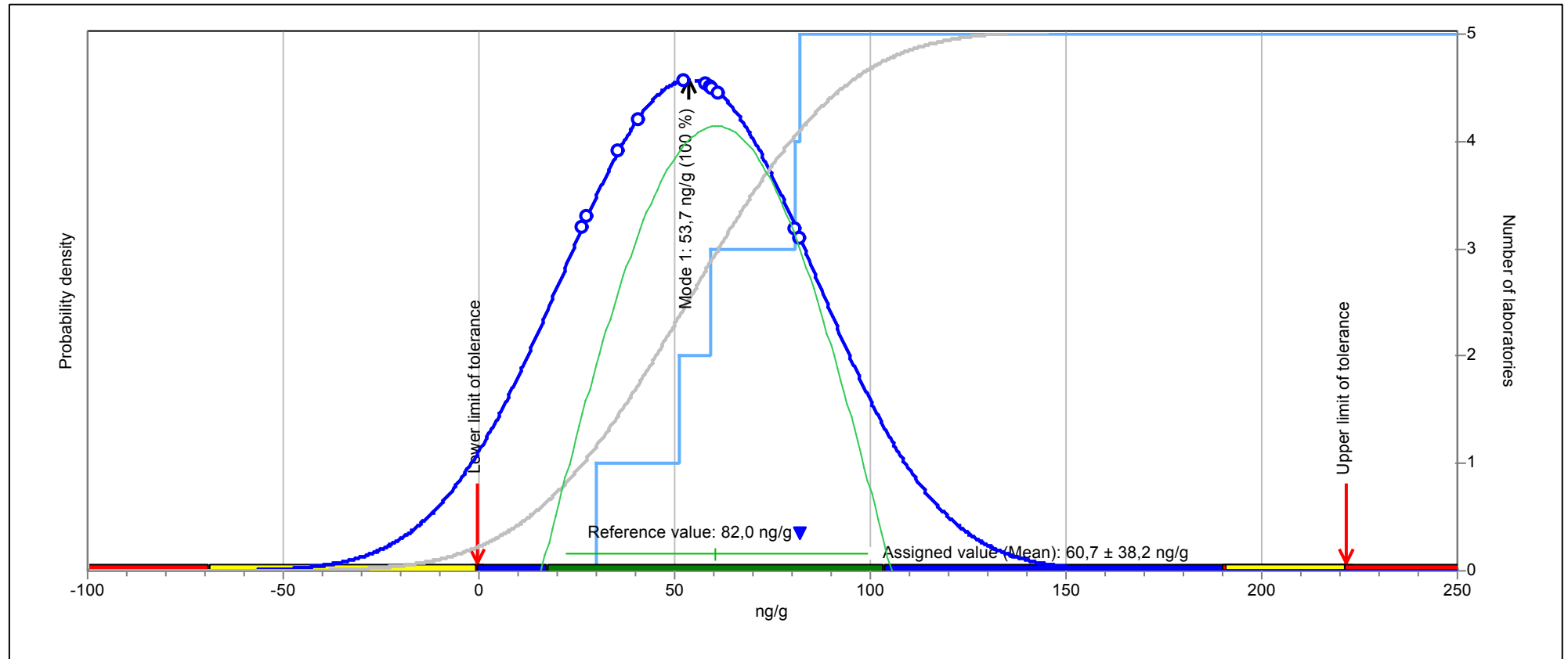


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Benzo[k]fluoranthene

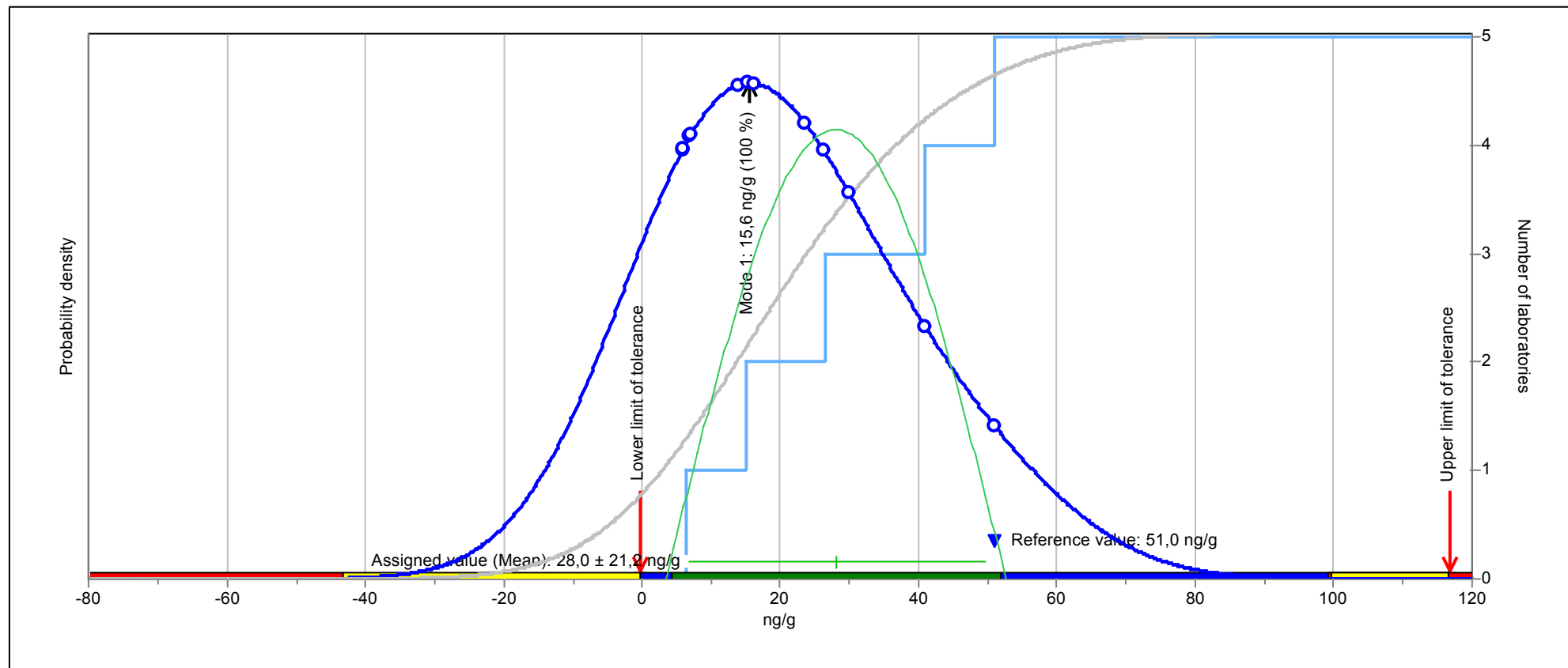


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Benzo[ghi]perylene

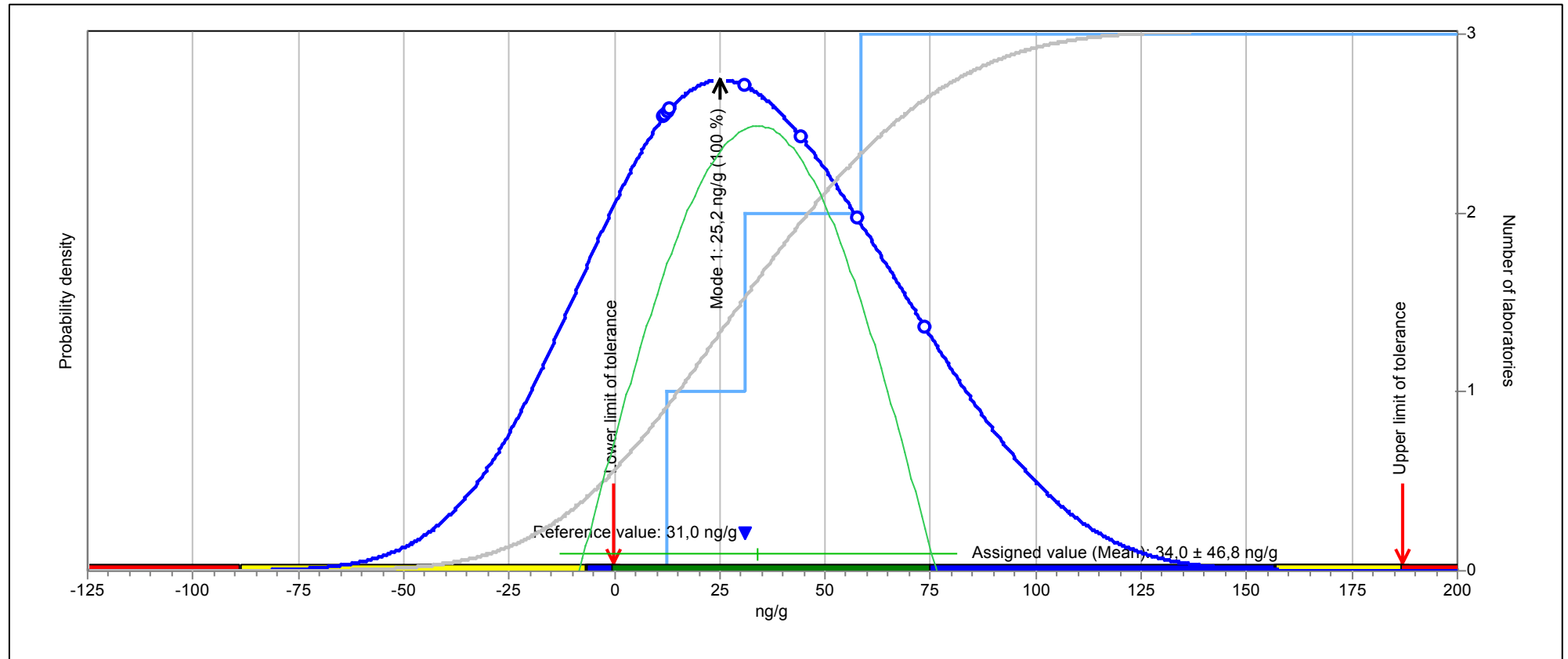


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Chrysene

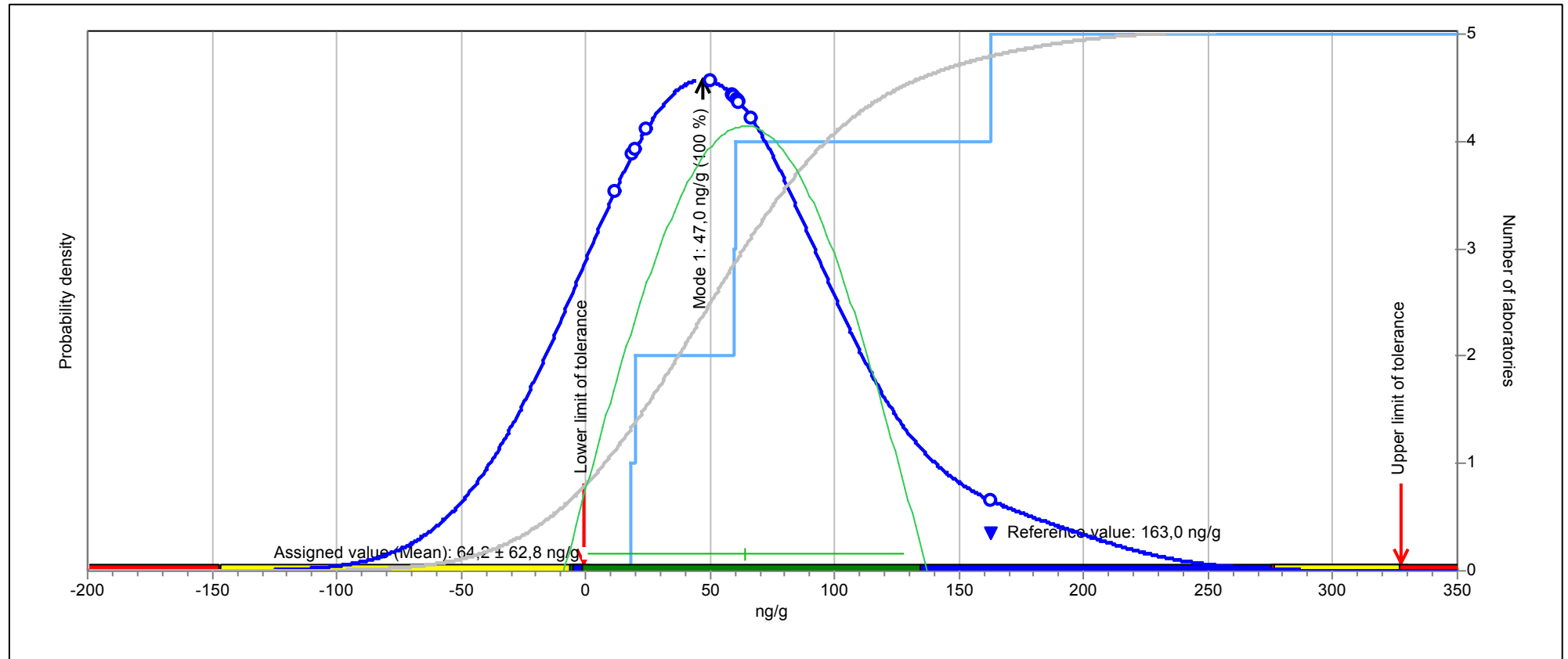


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Dibenzo[a,h]anthracene

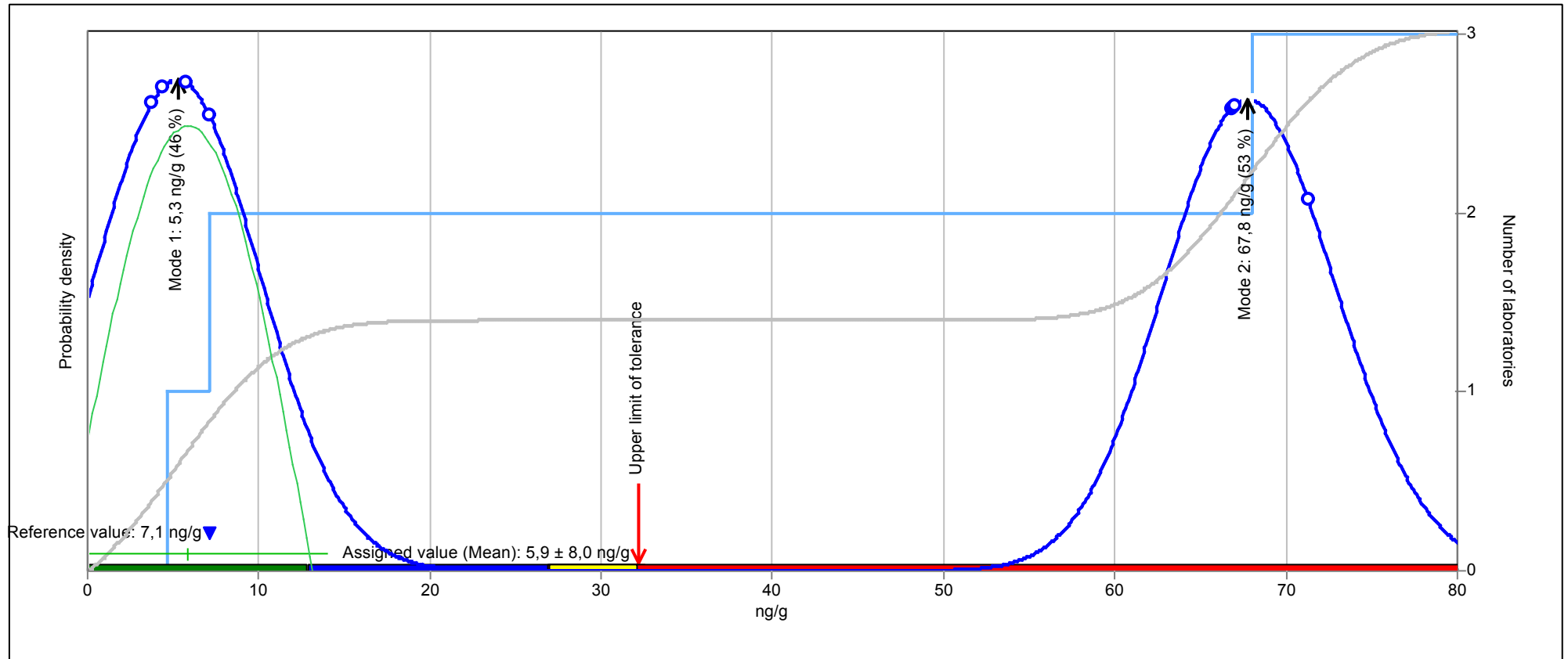


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Fluoranthene

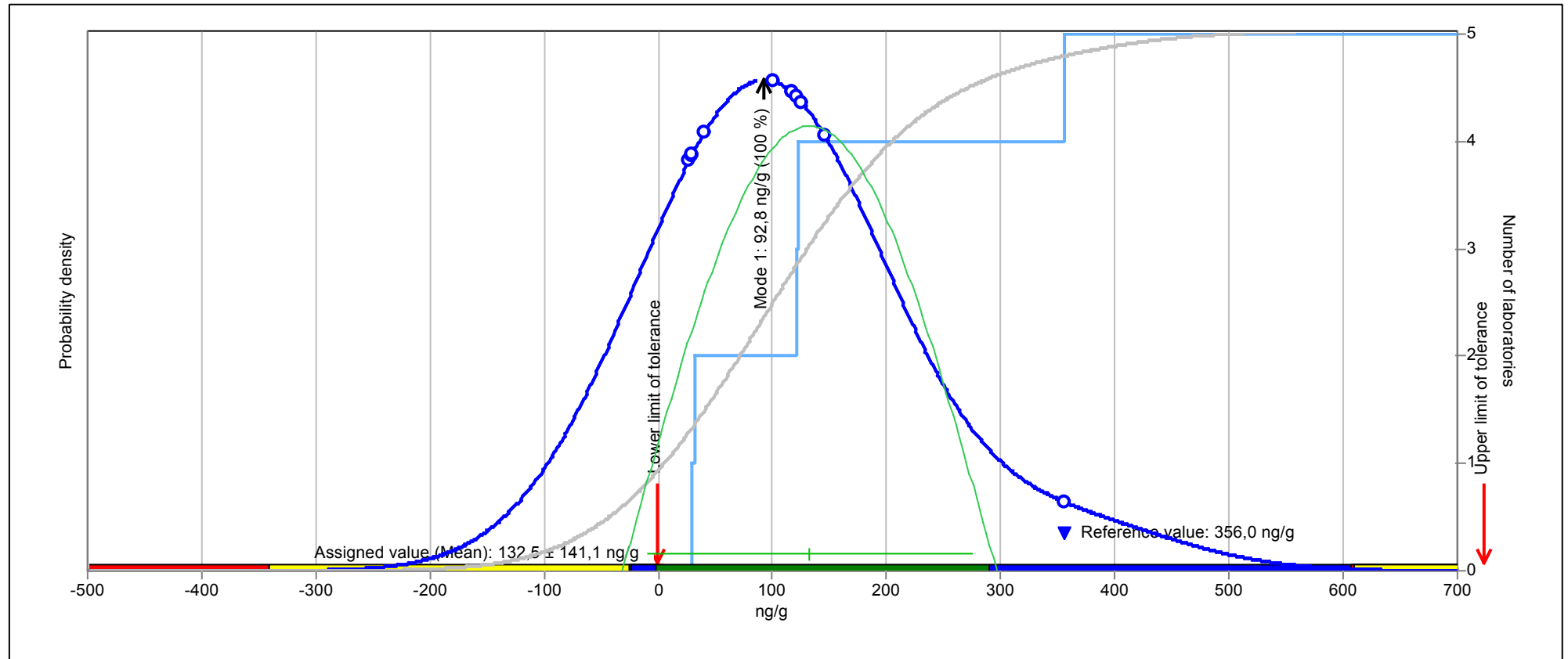


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Fluorene

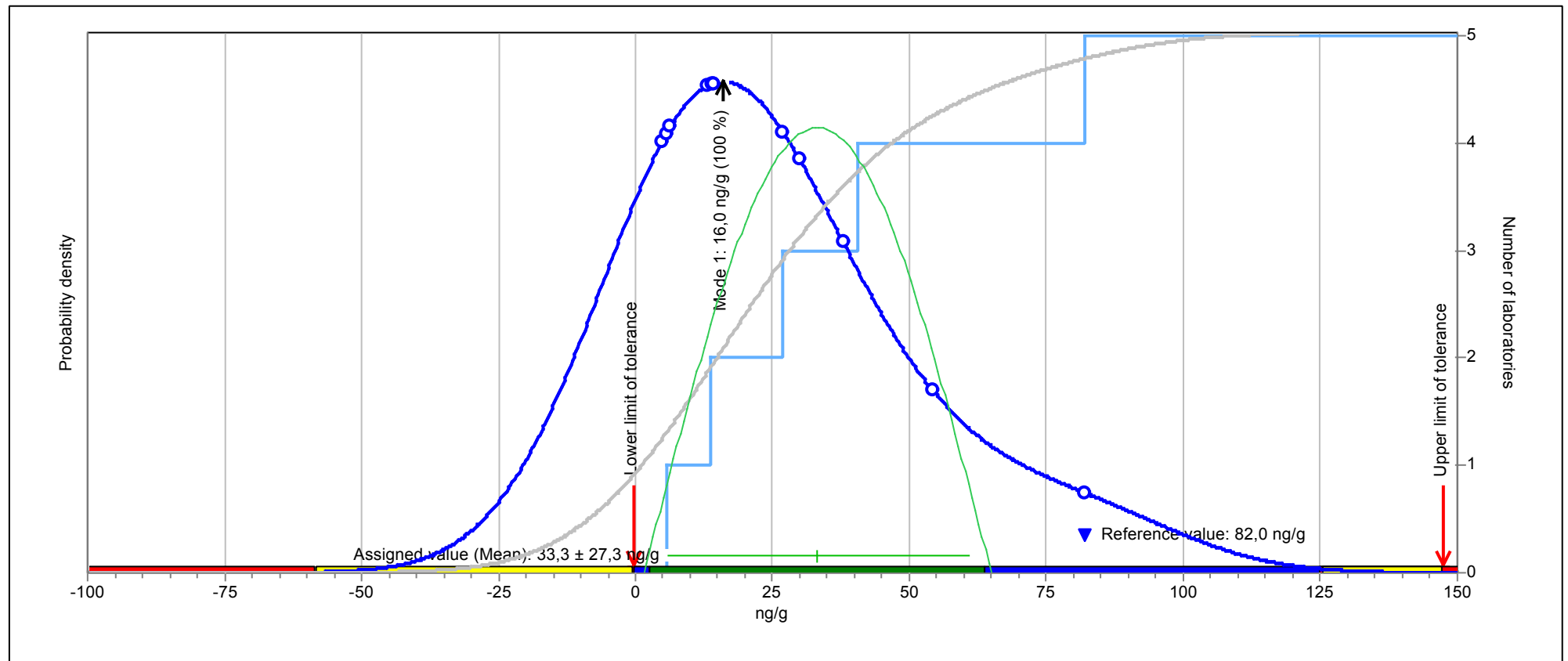


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Indeno[1,2,3-cd]pyrene

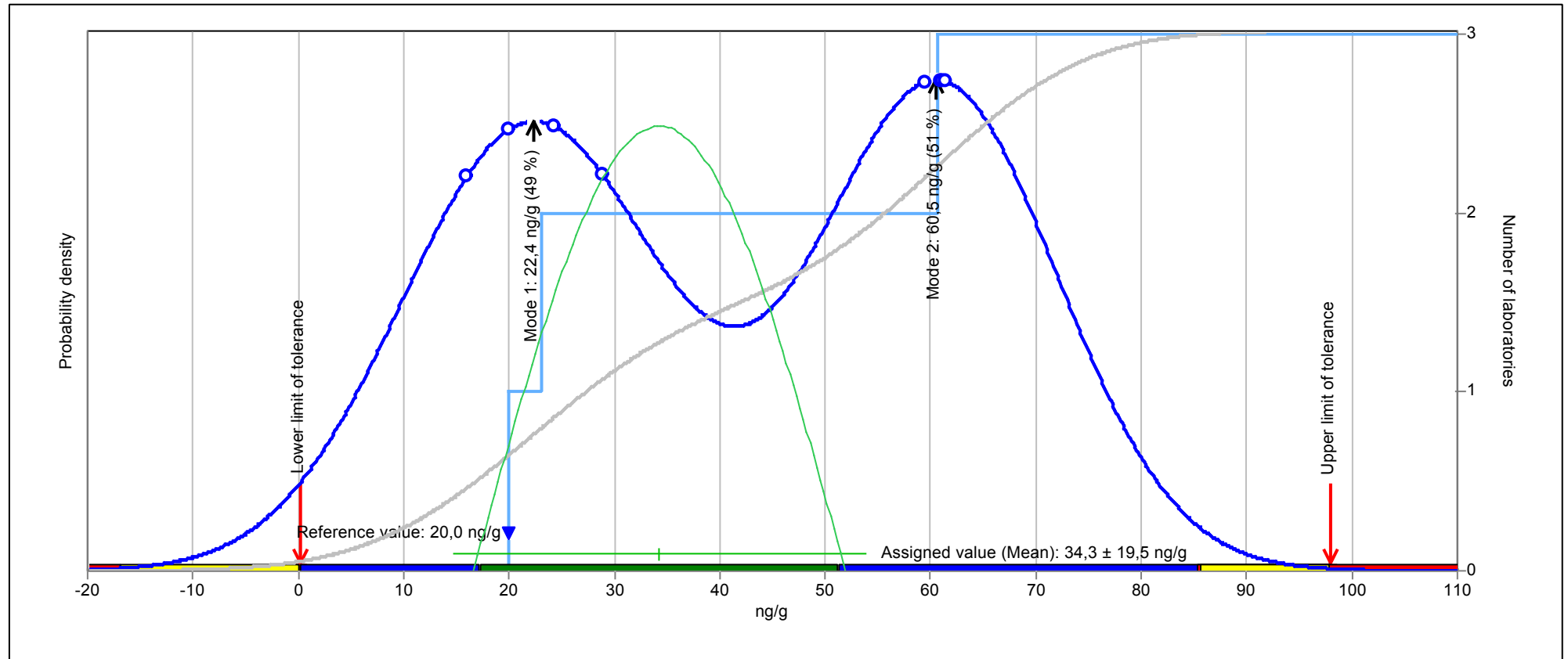


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Naphthalene

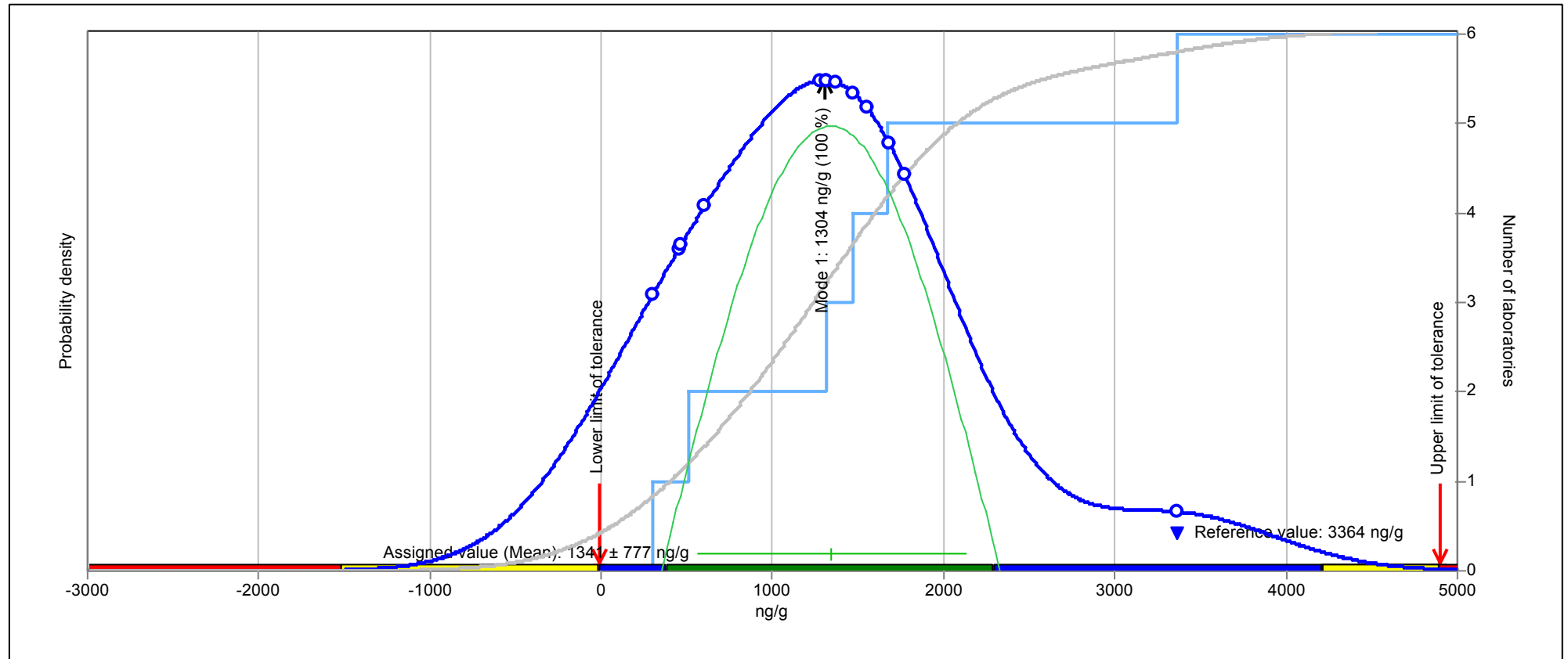


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Phenanthrene

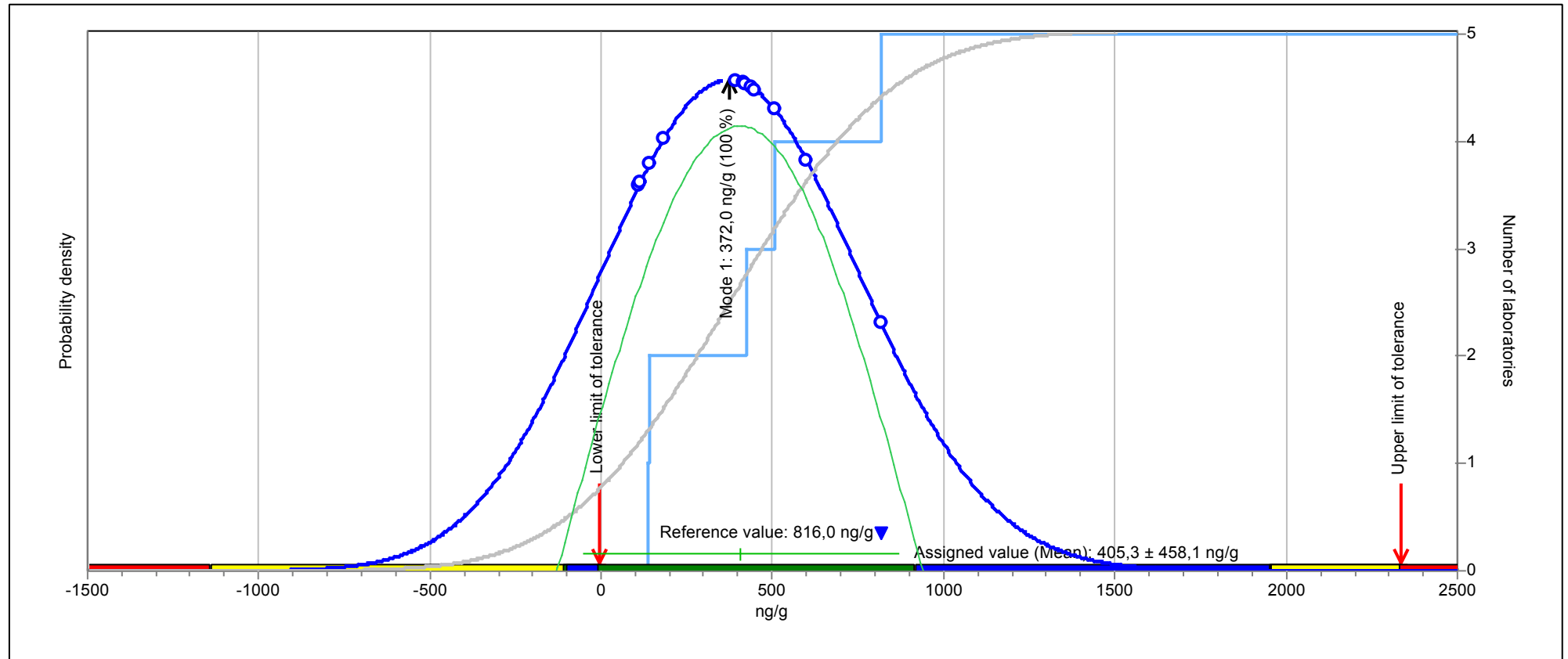


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: PAH_Pyrene

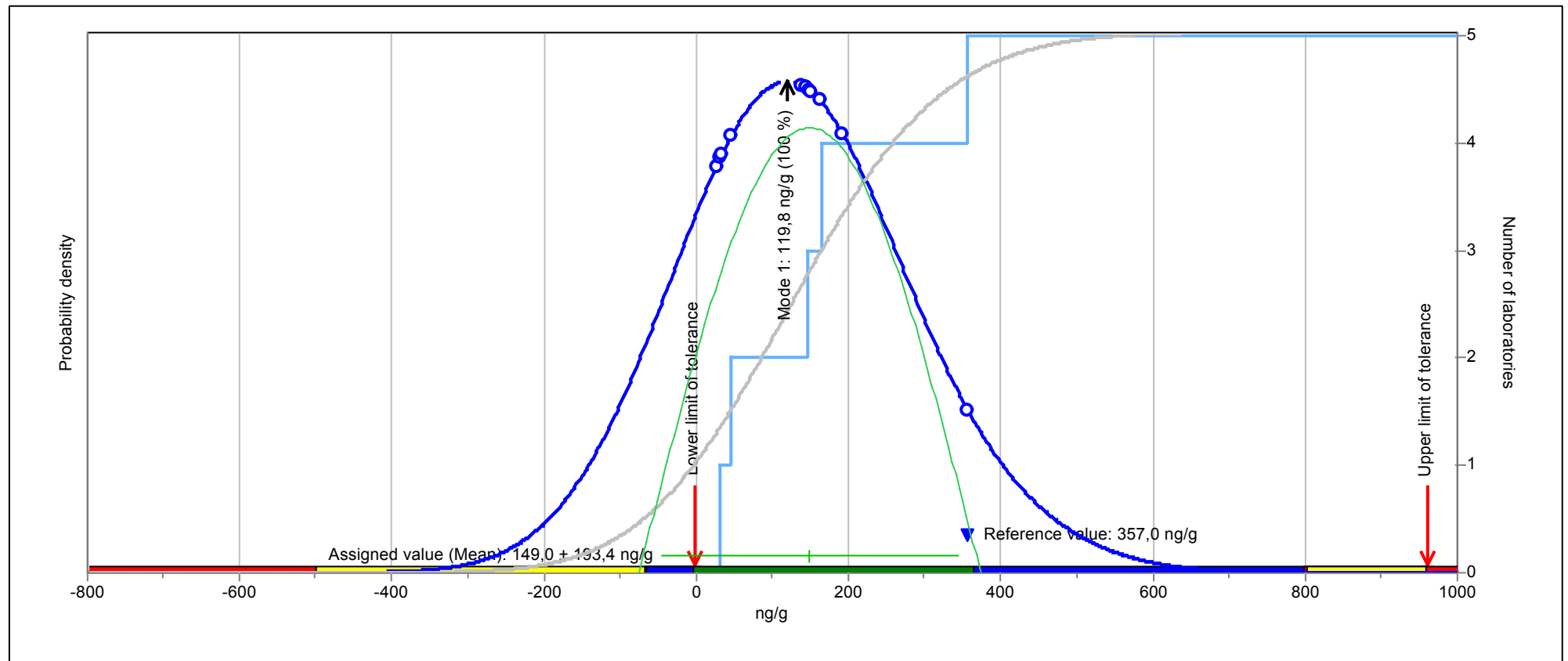


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: Pb

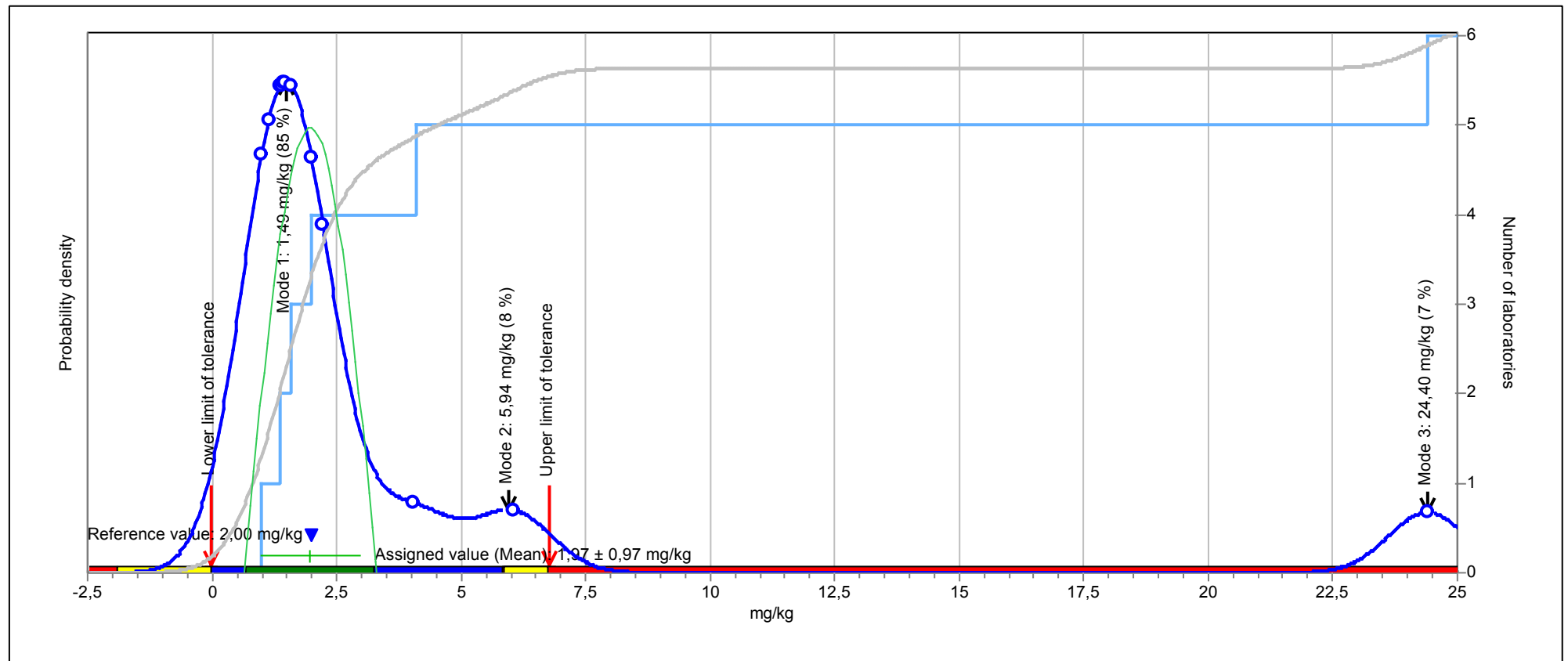


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: pH

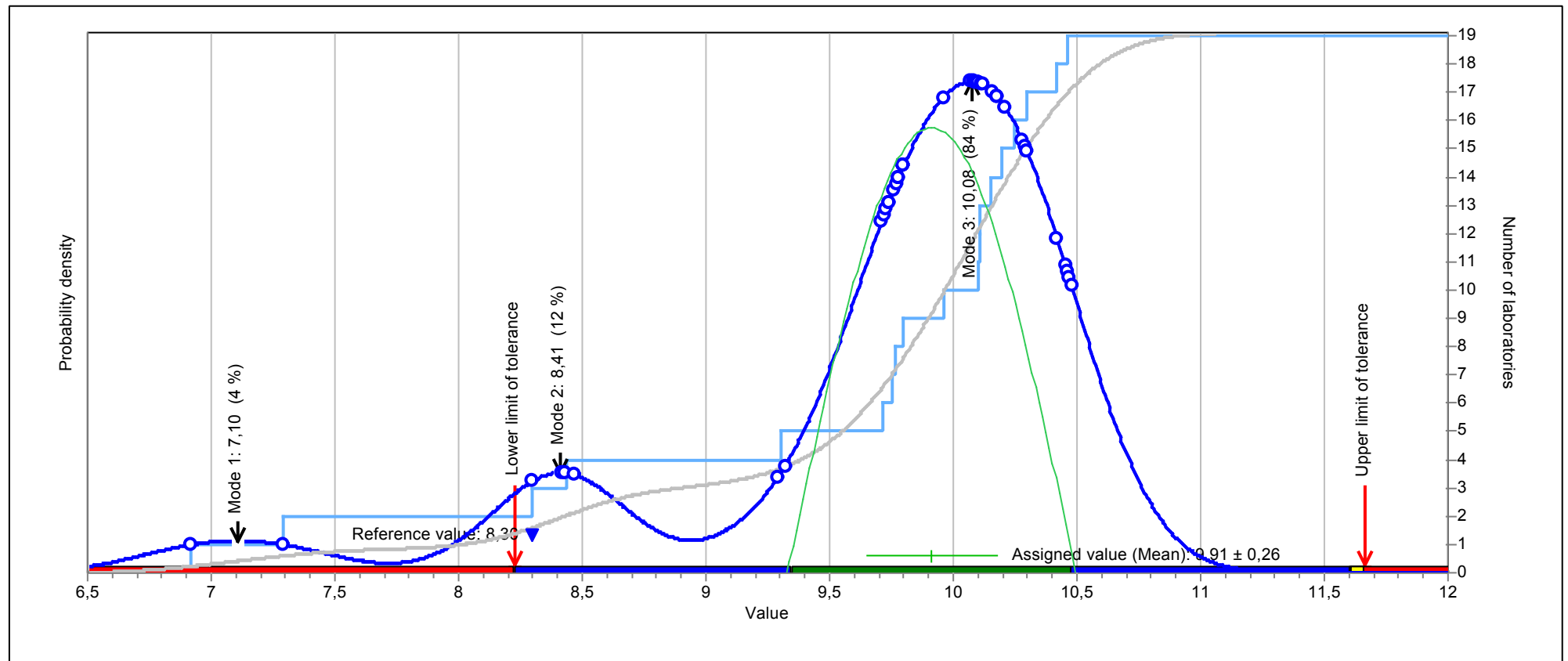


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: S

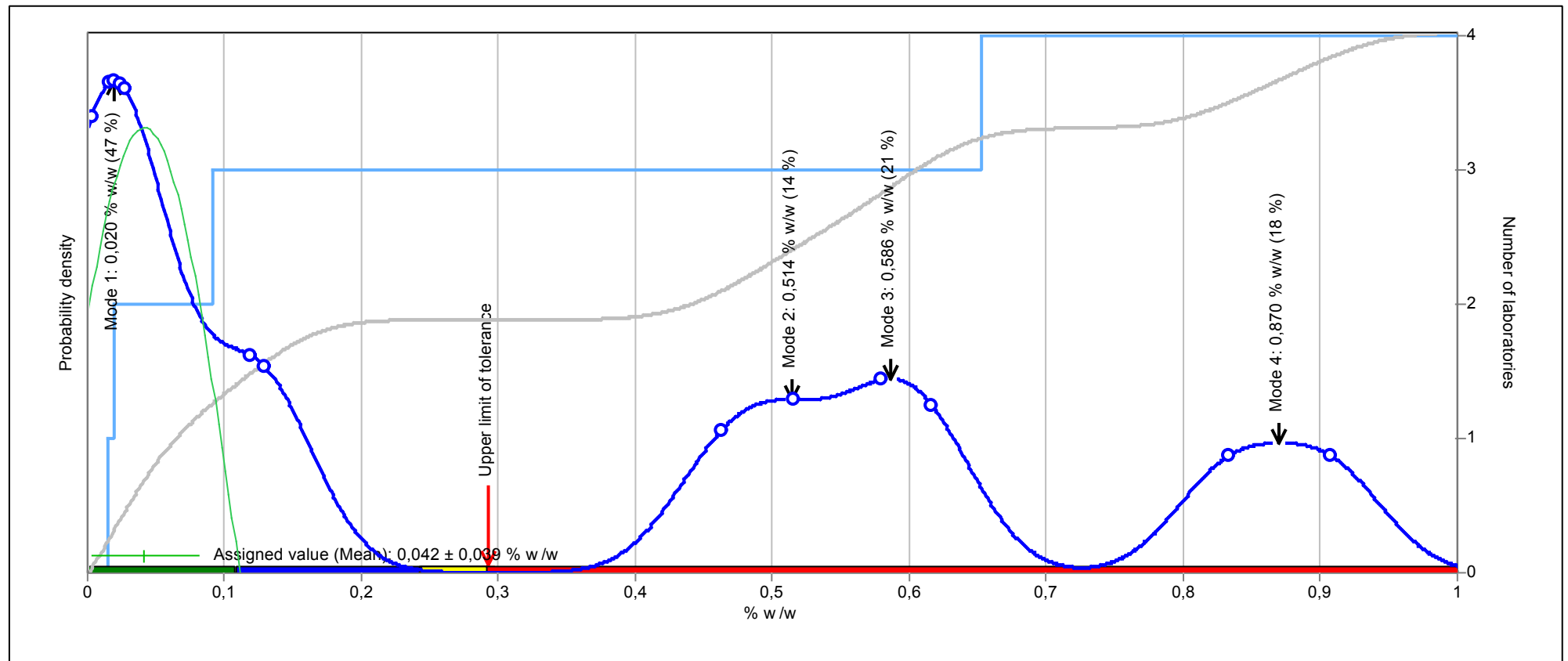


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: S_ICP-OES

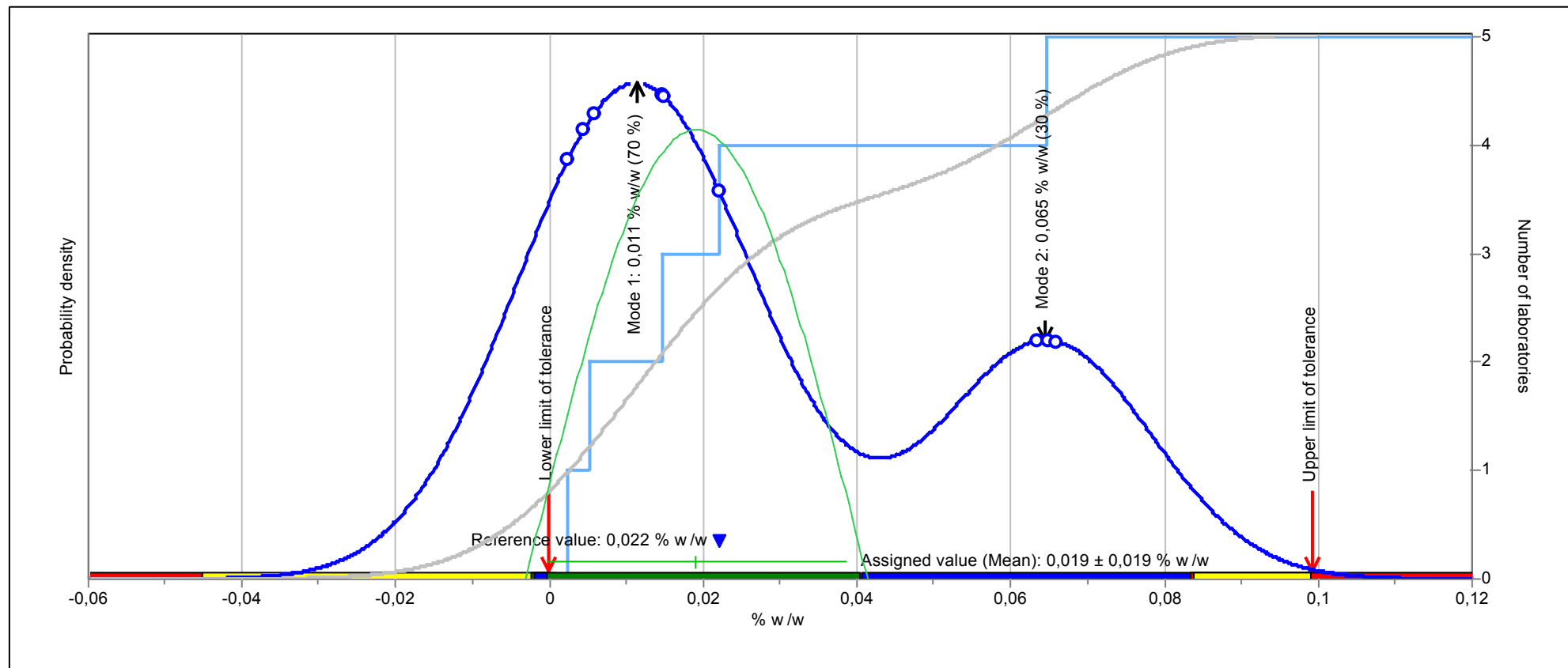


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1
Parameter: Specific_surface_area

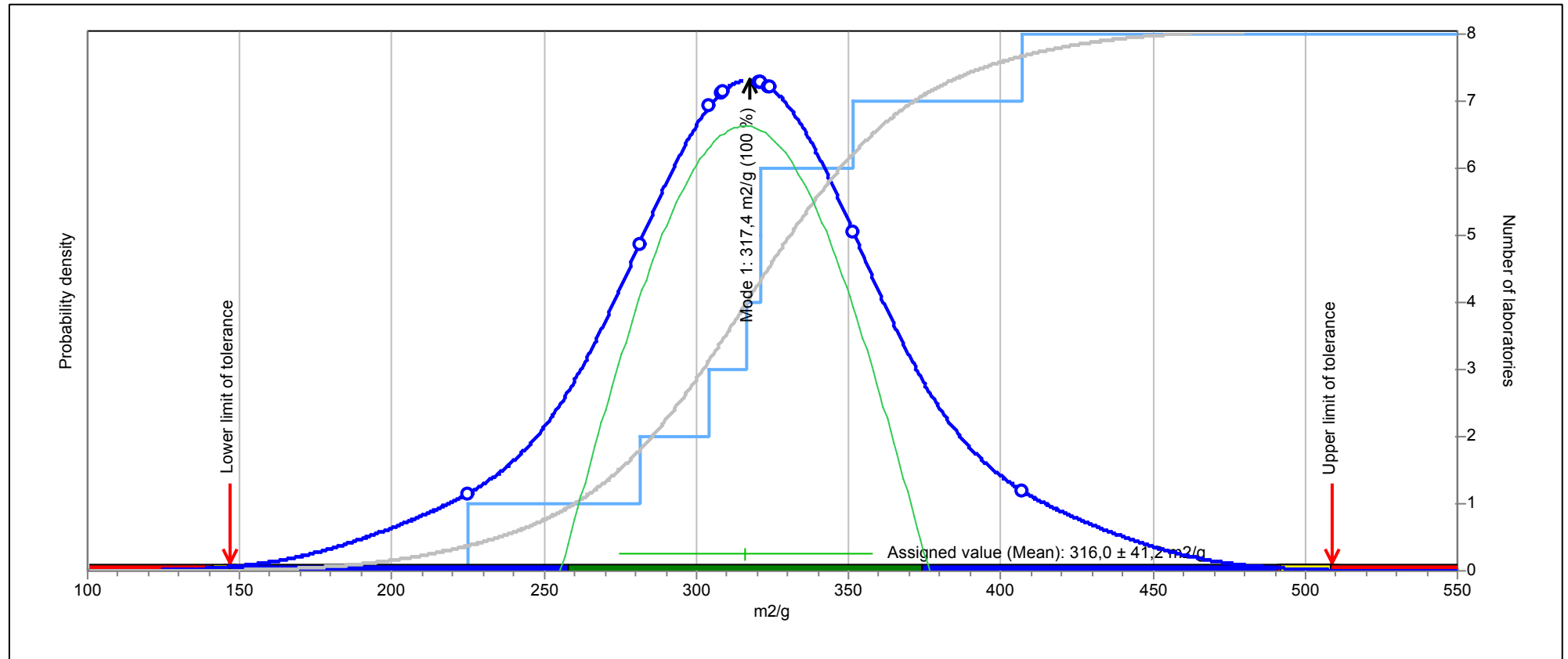


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC1

Parameter: Zn

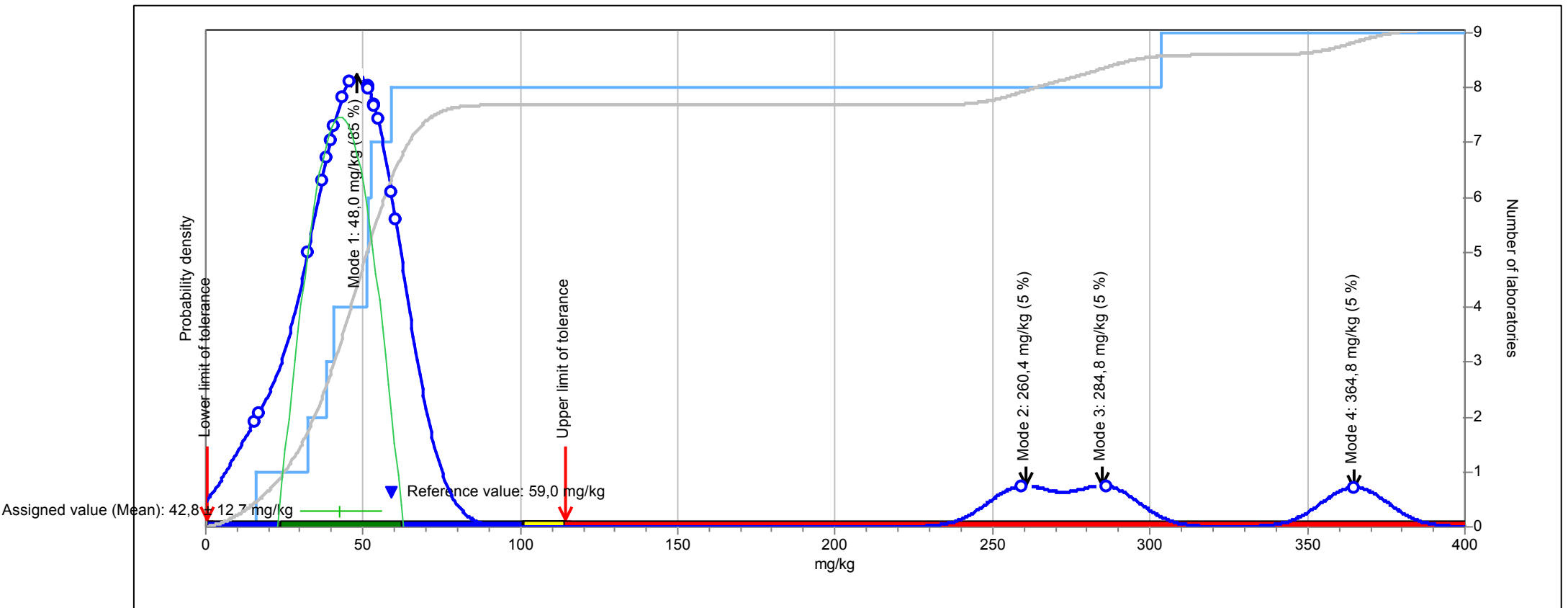


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: Ash

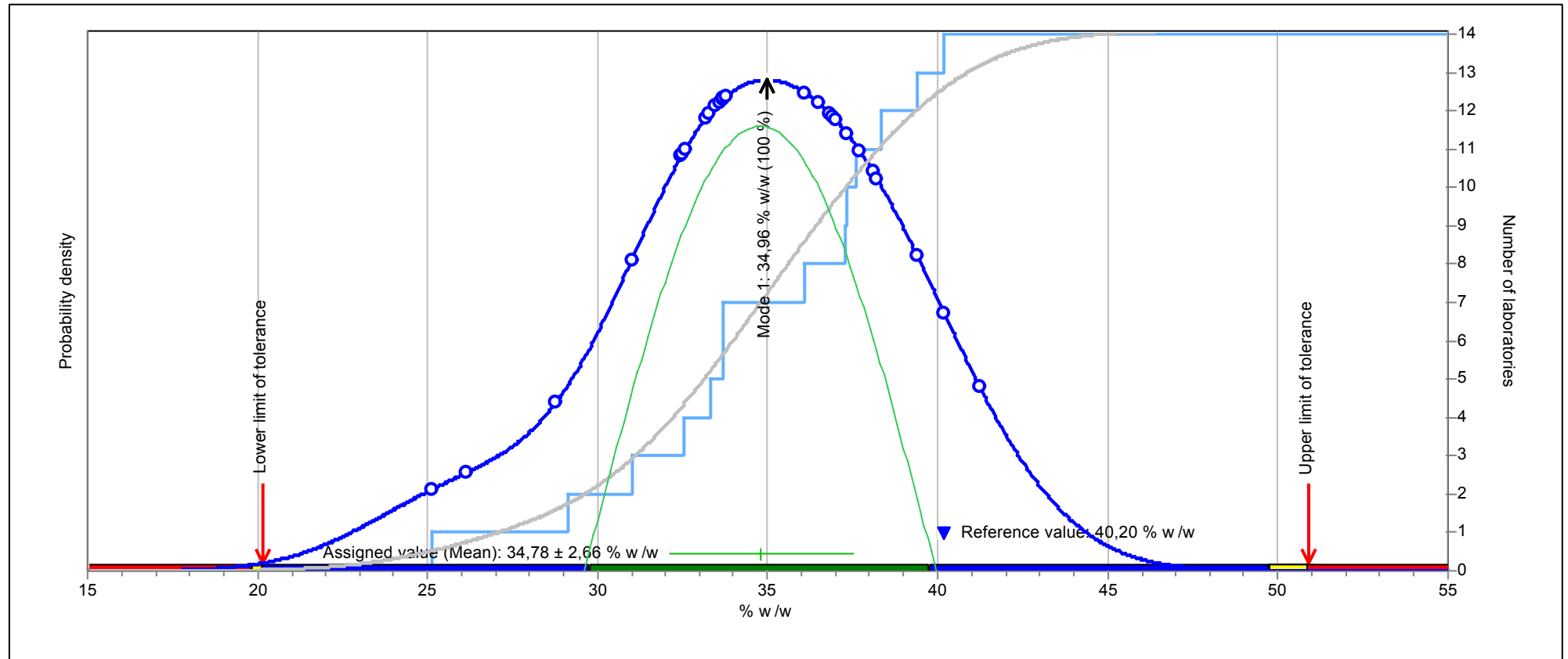


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: C

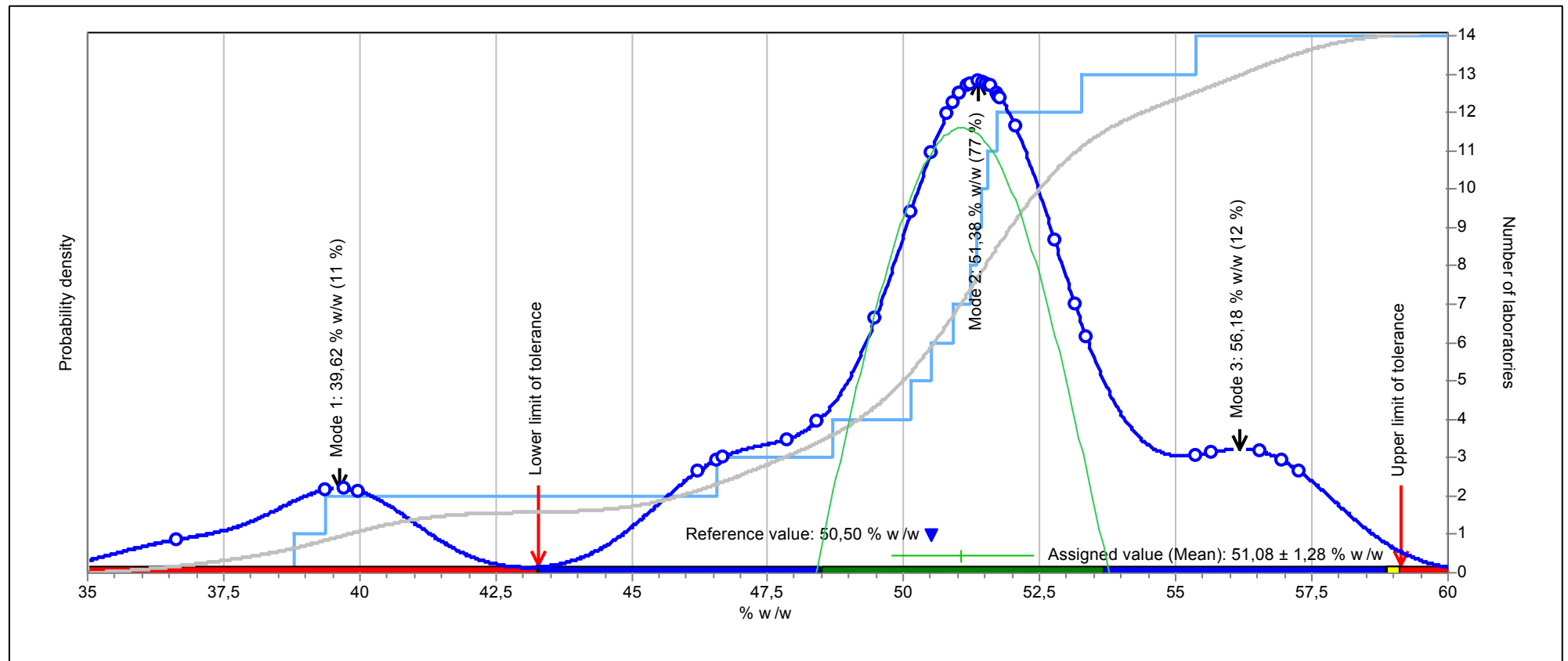


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: Ca

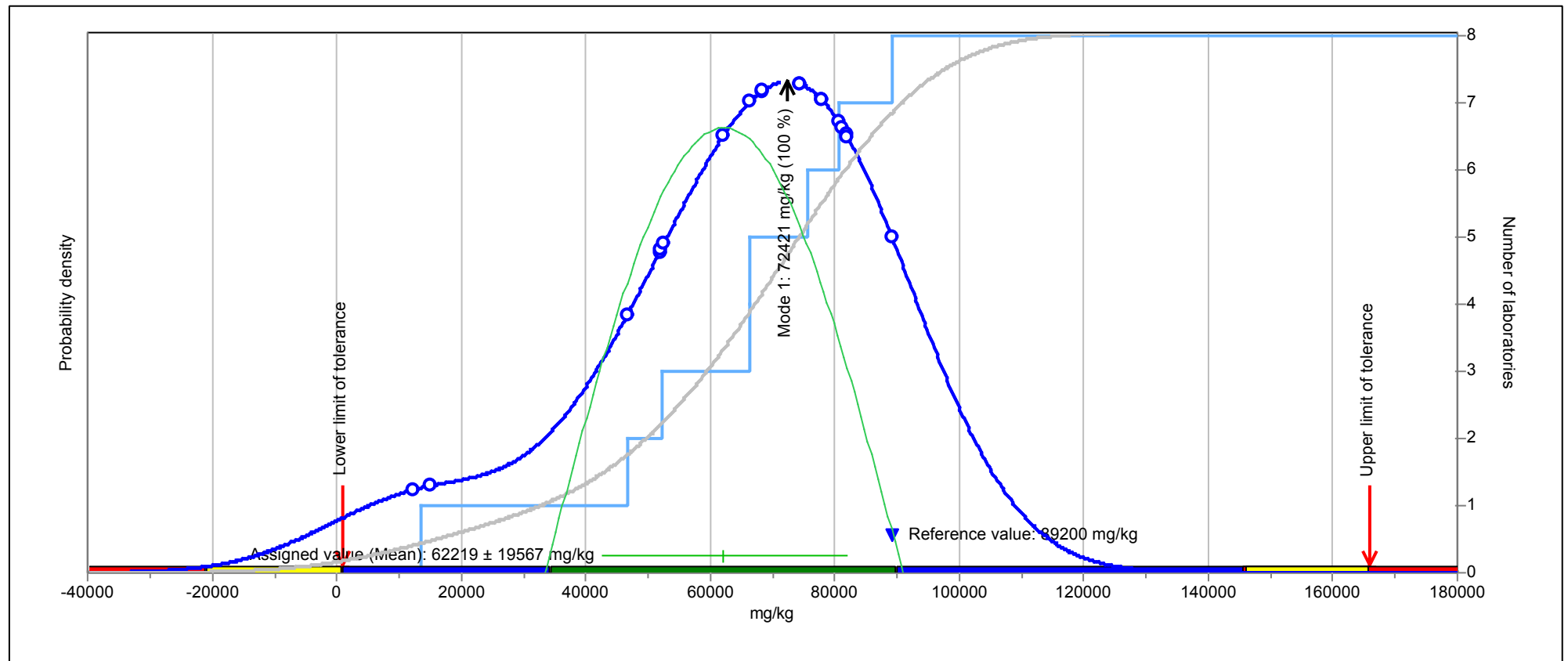


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: Cd

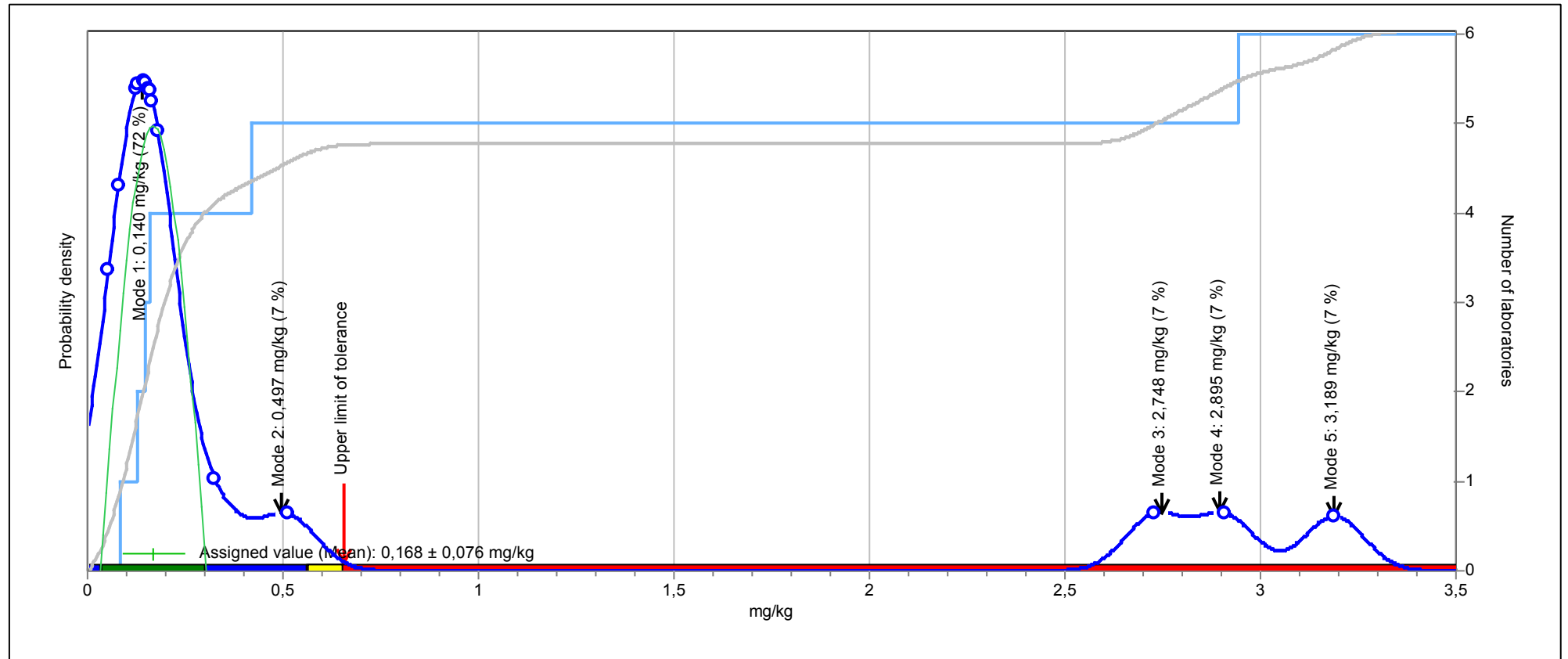


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: Cr

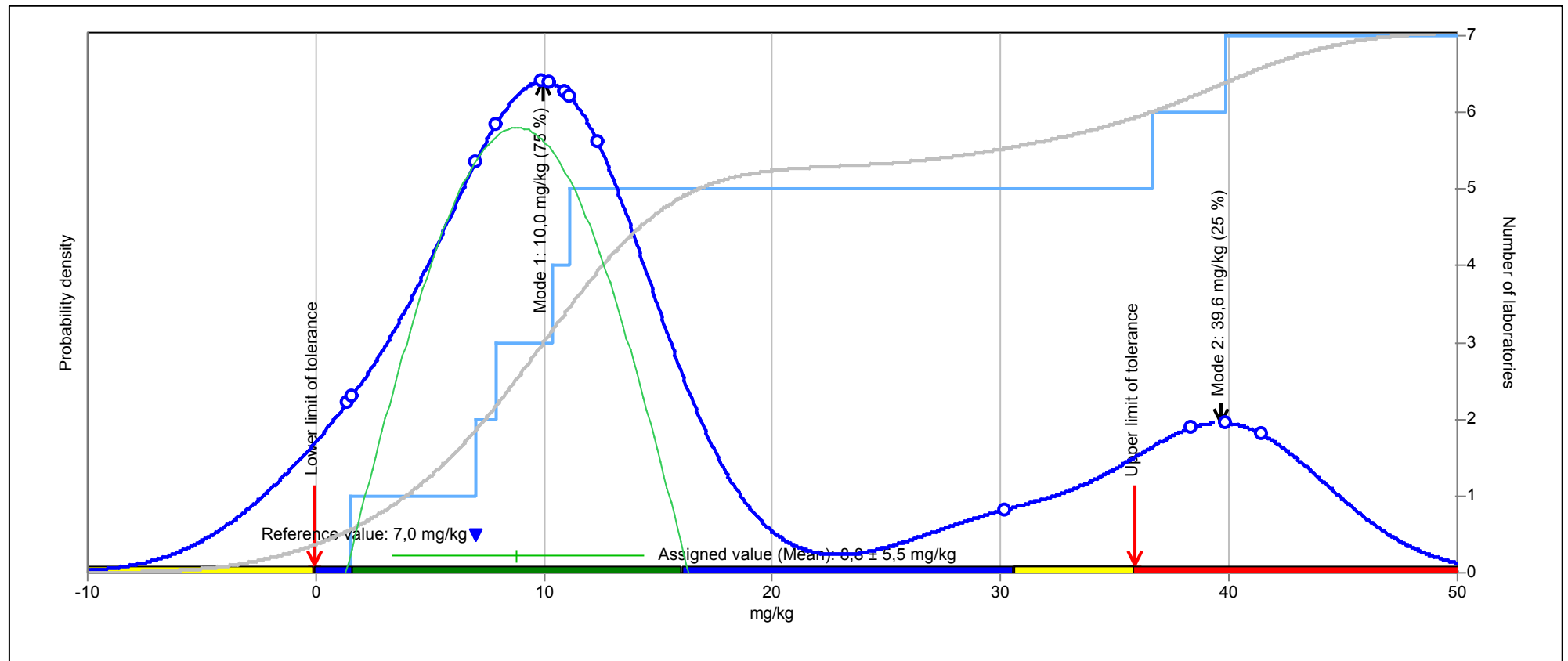


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: Cu

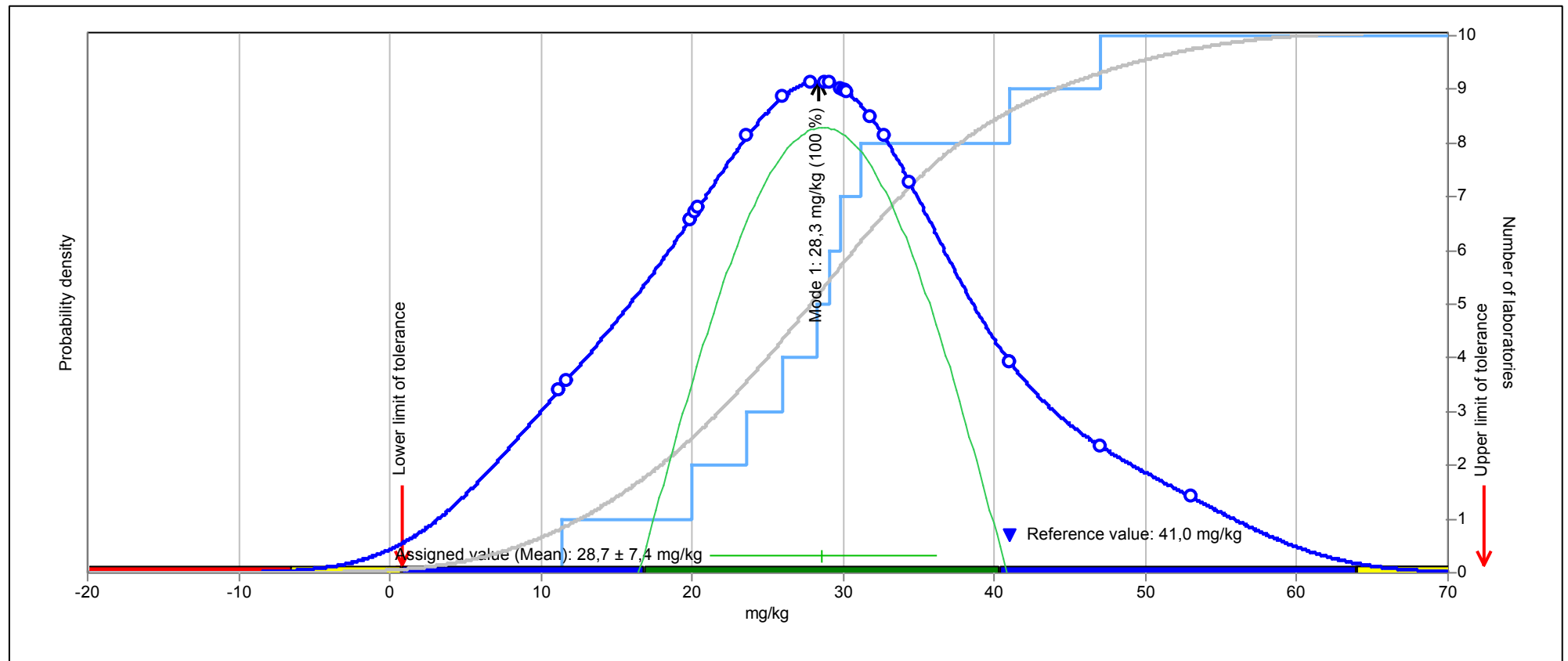


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: EC

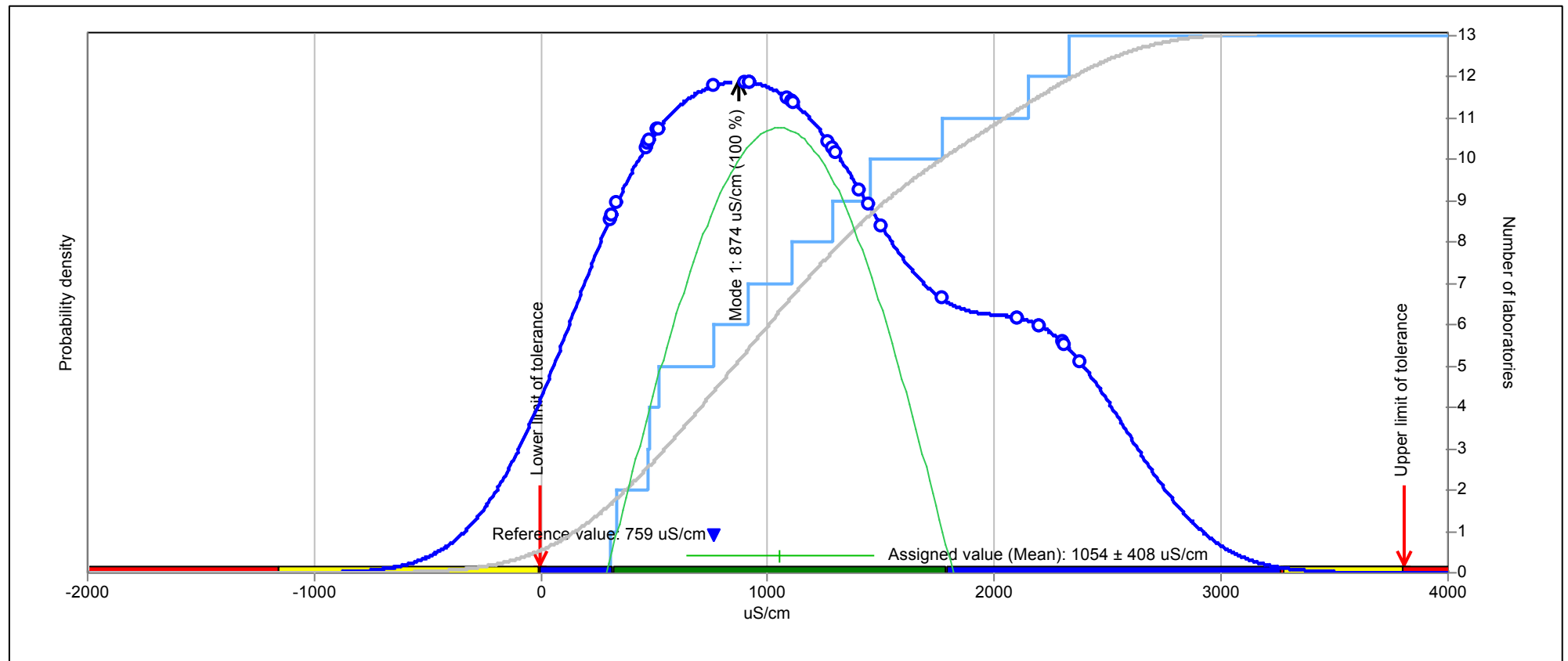


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: Fe

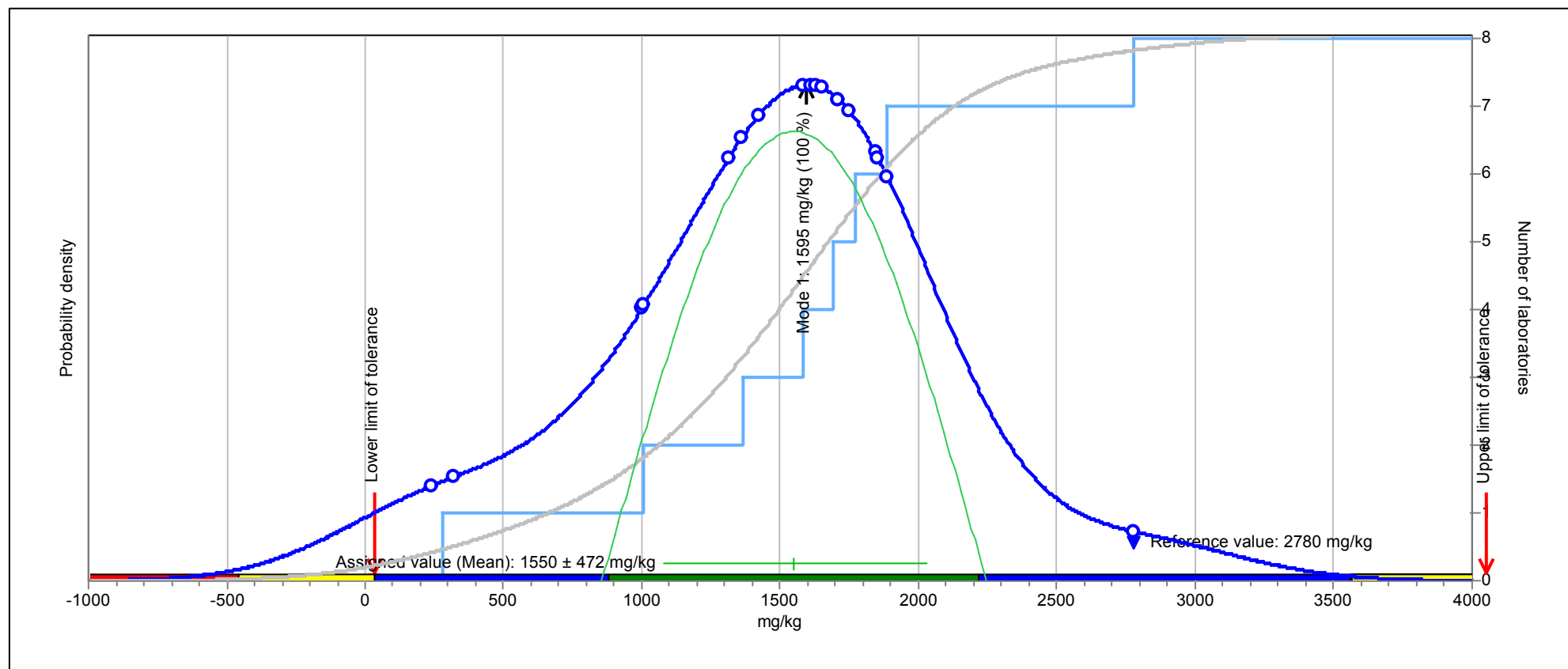


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: H

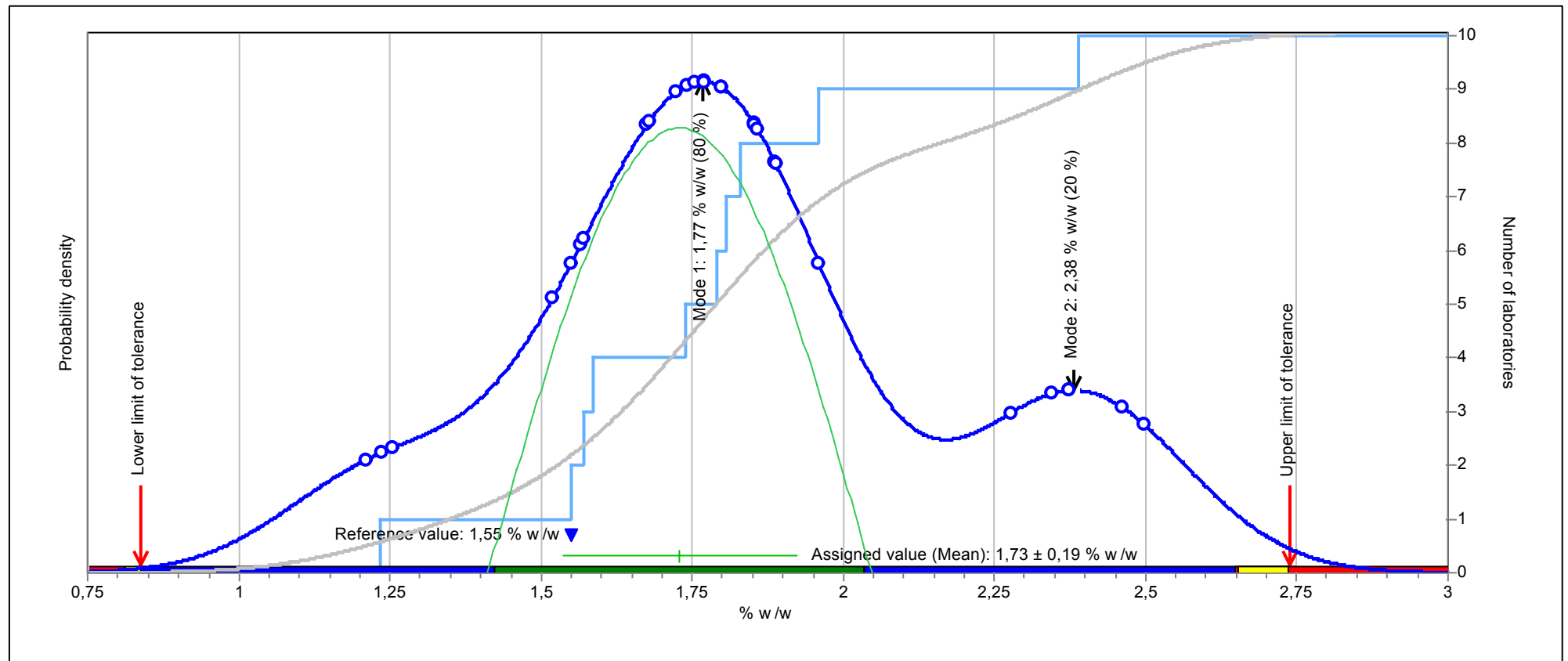


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: K

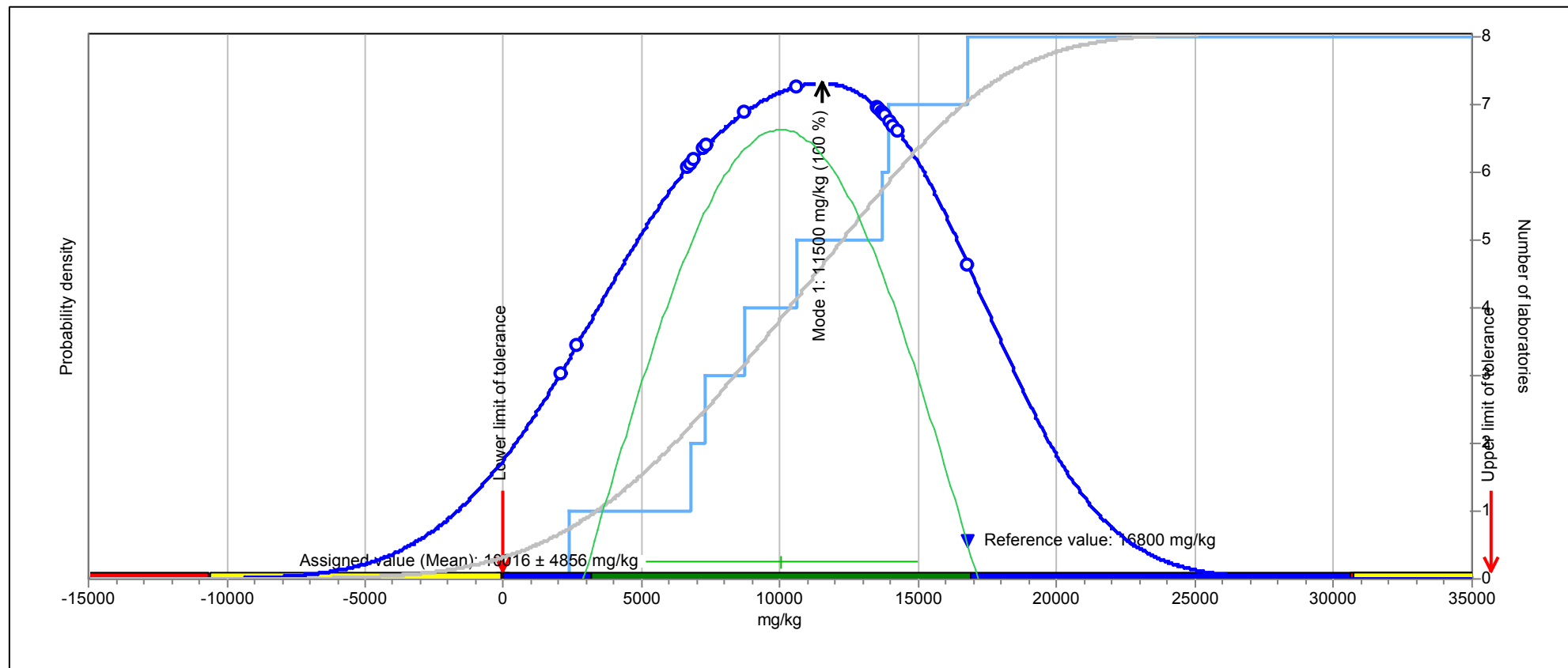


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: Mg

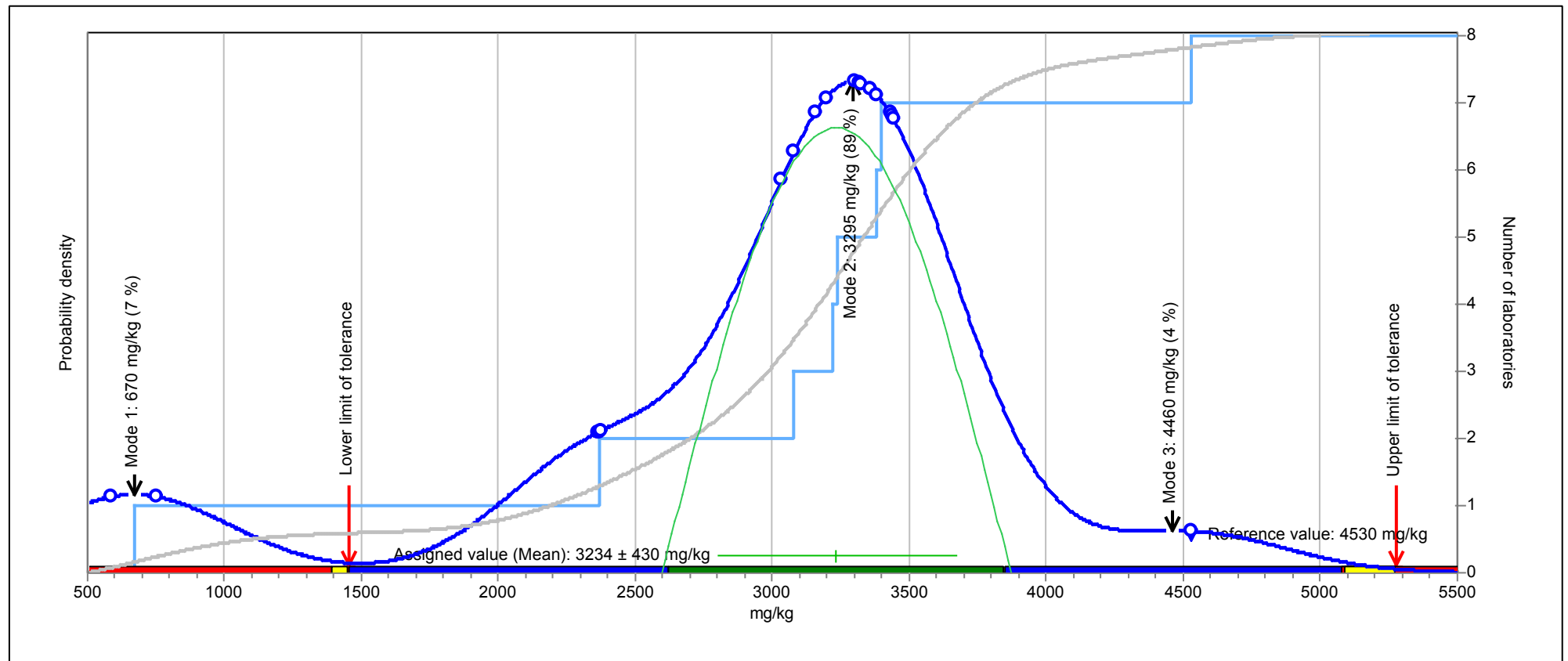


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: Mn

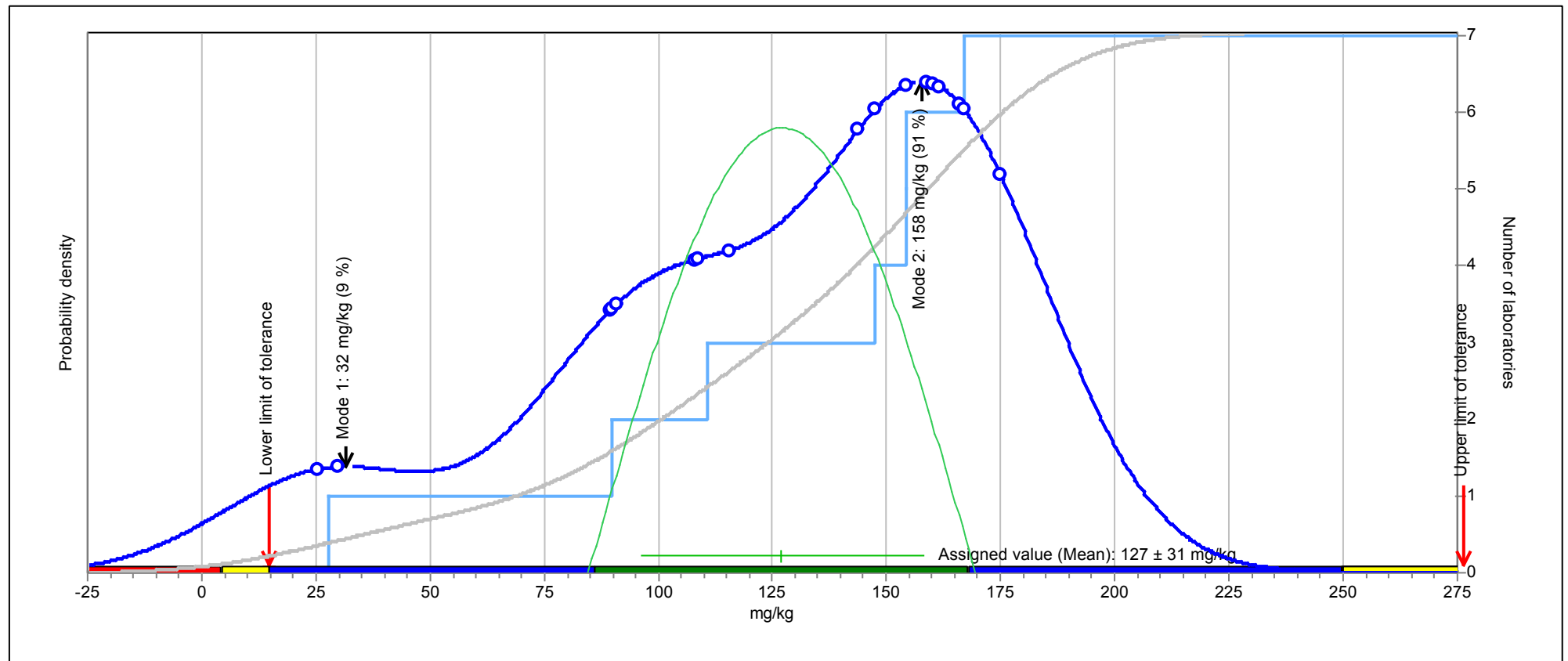


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: N

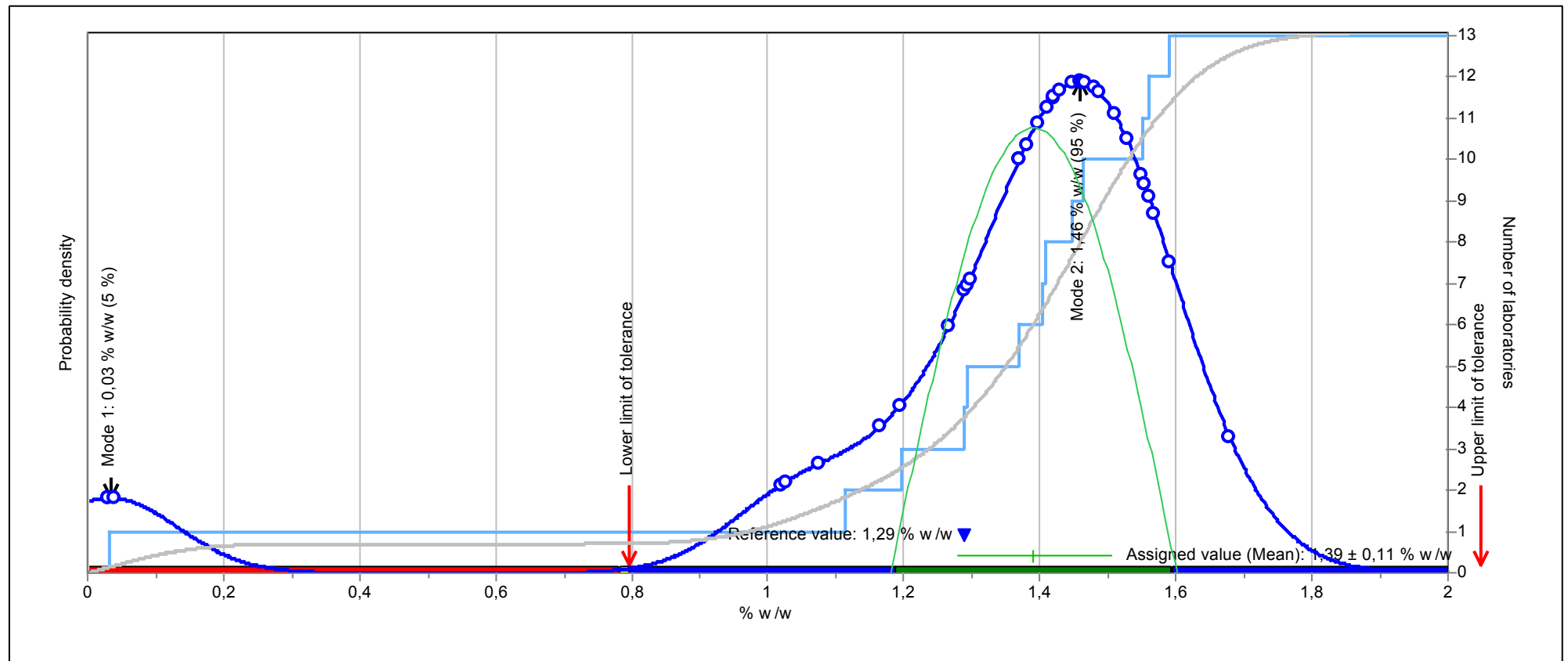


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: Na

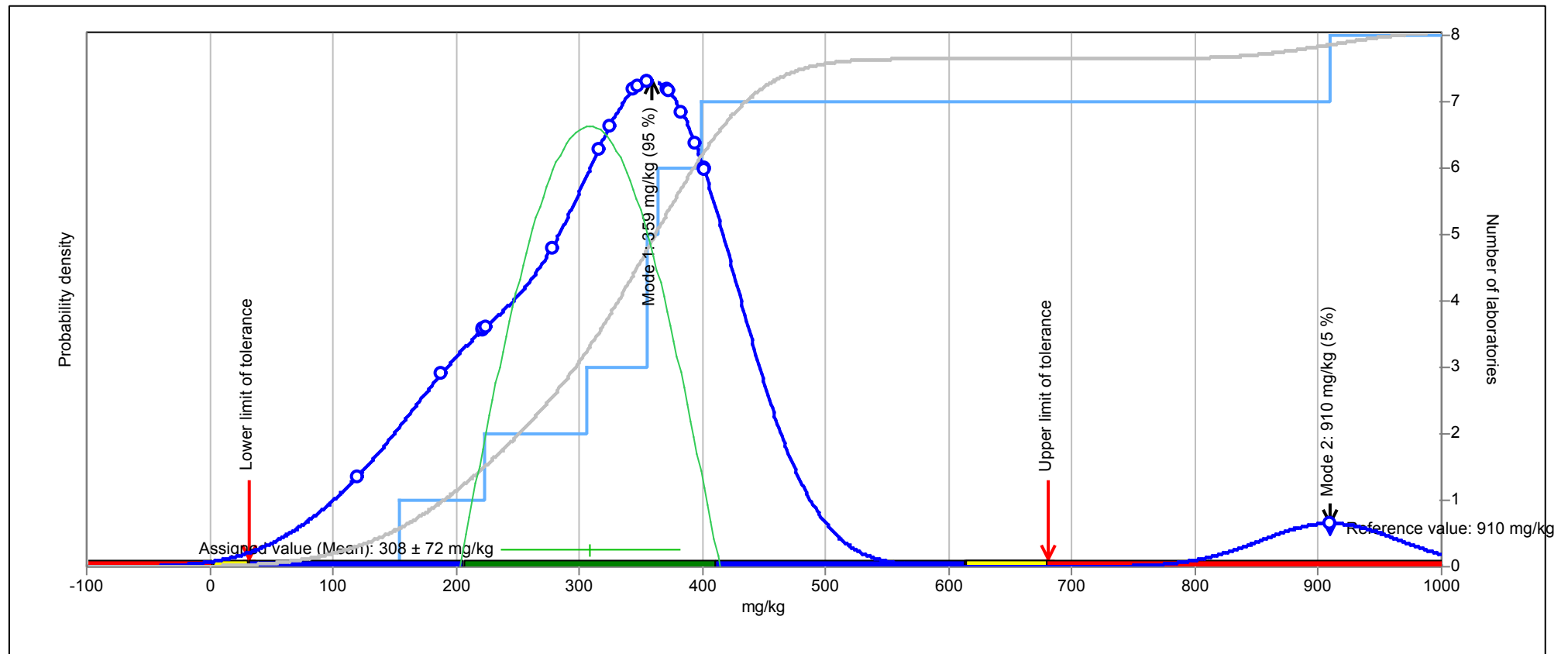


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: Ni

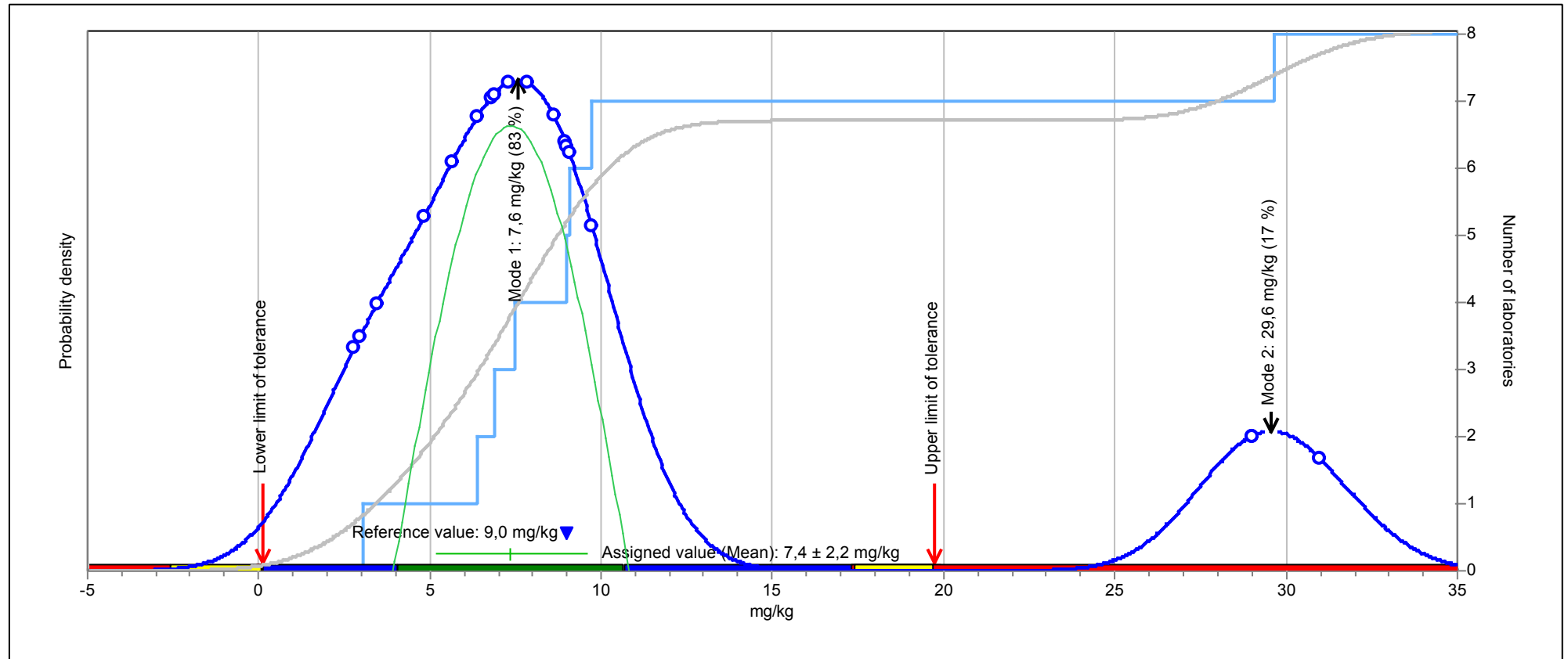


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: O

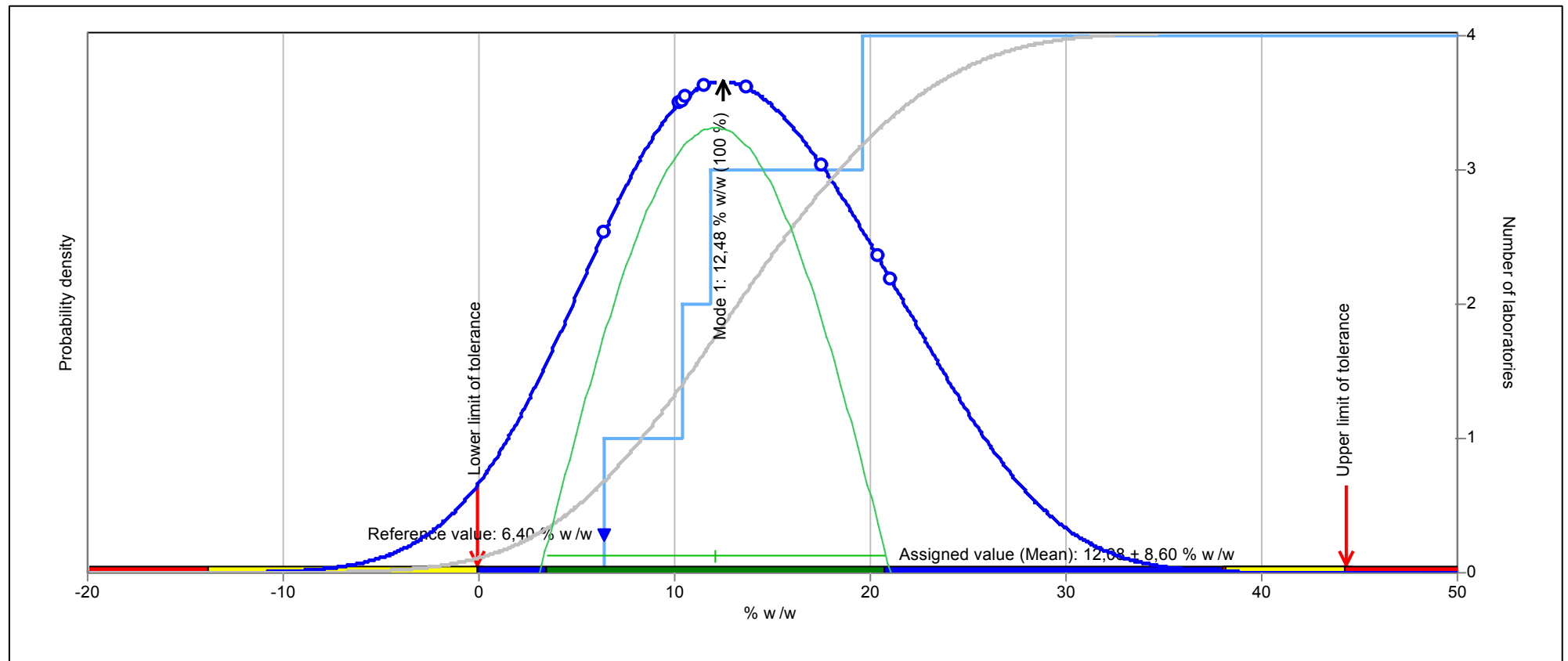


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: P

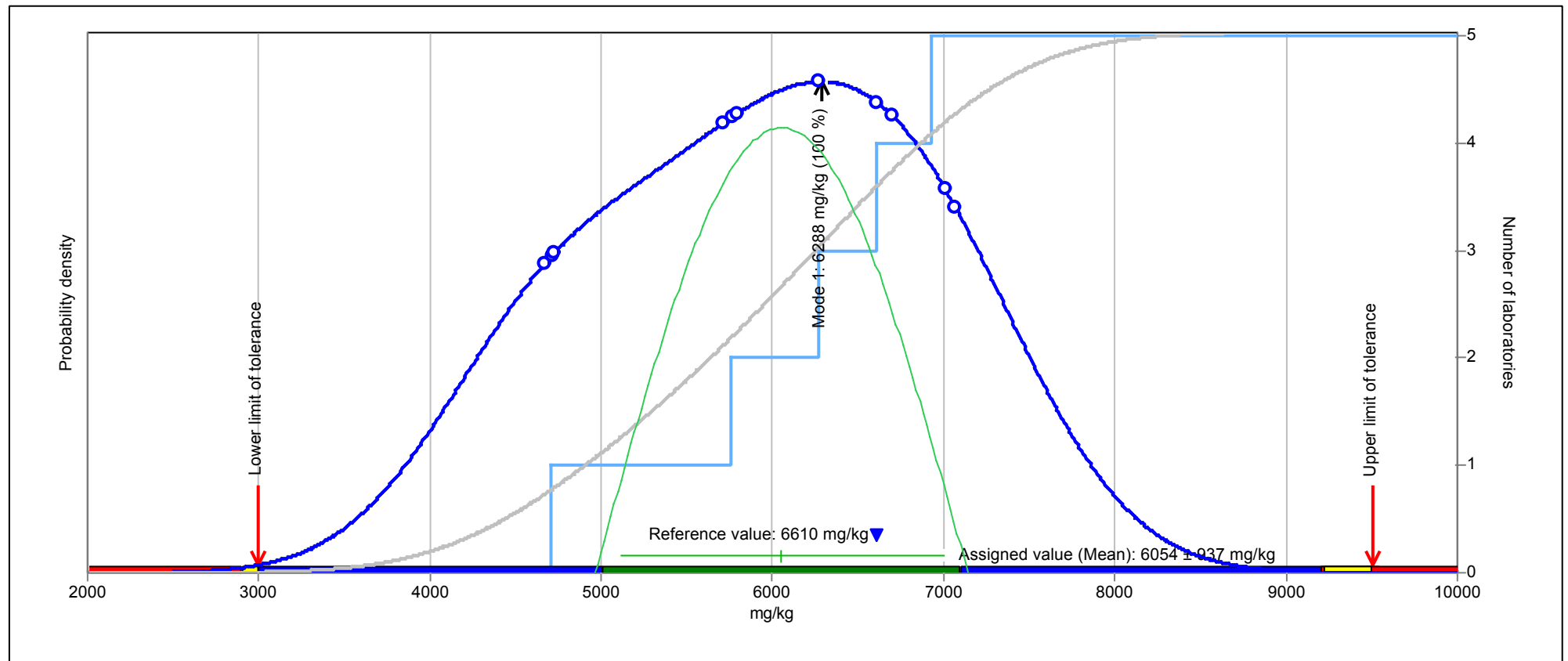


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Sum

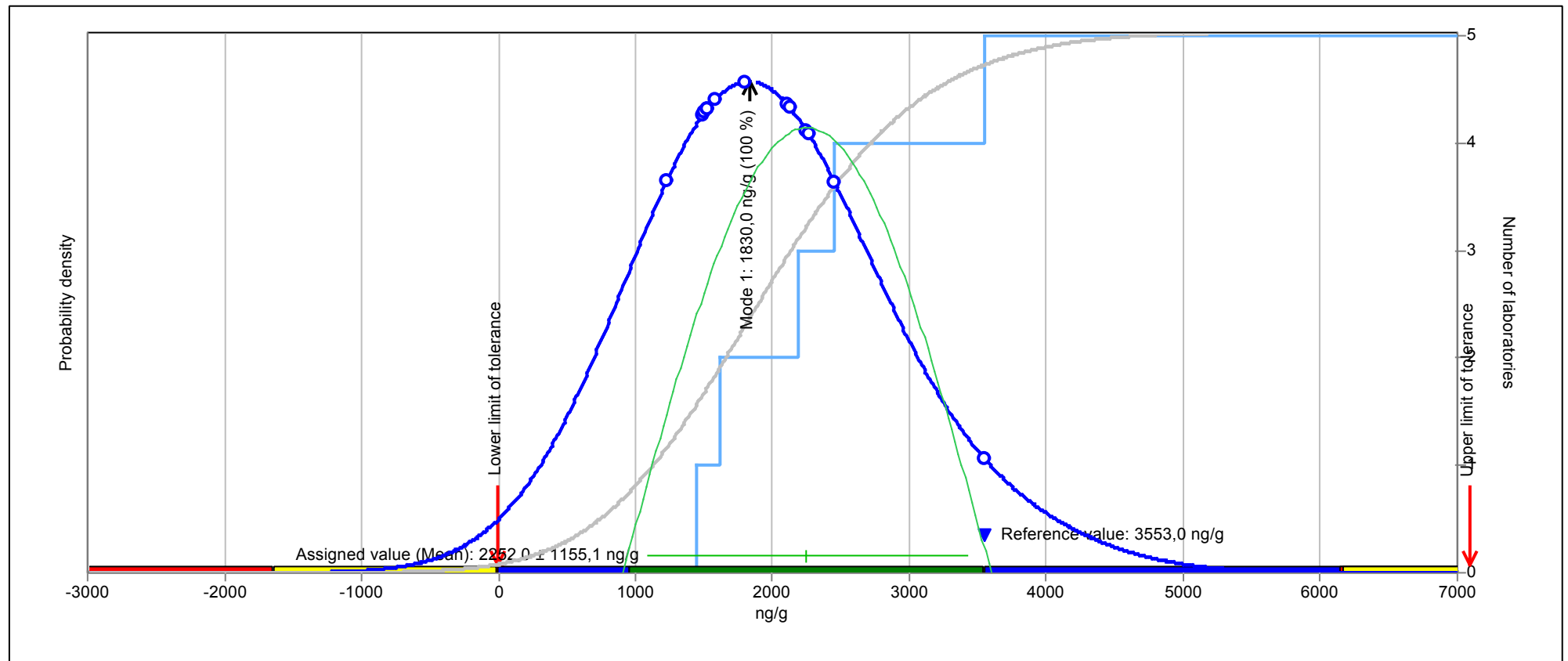


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Acenaphthene

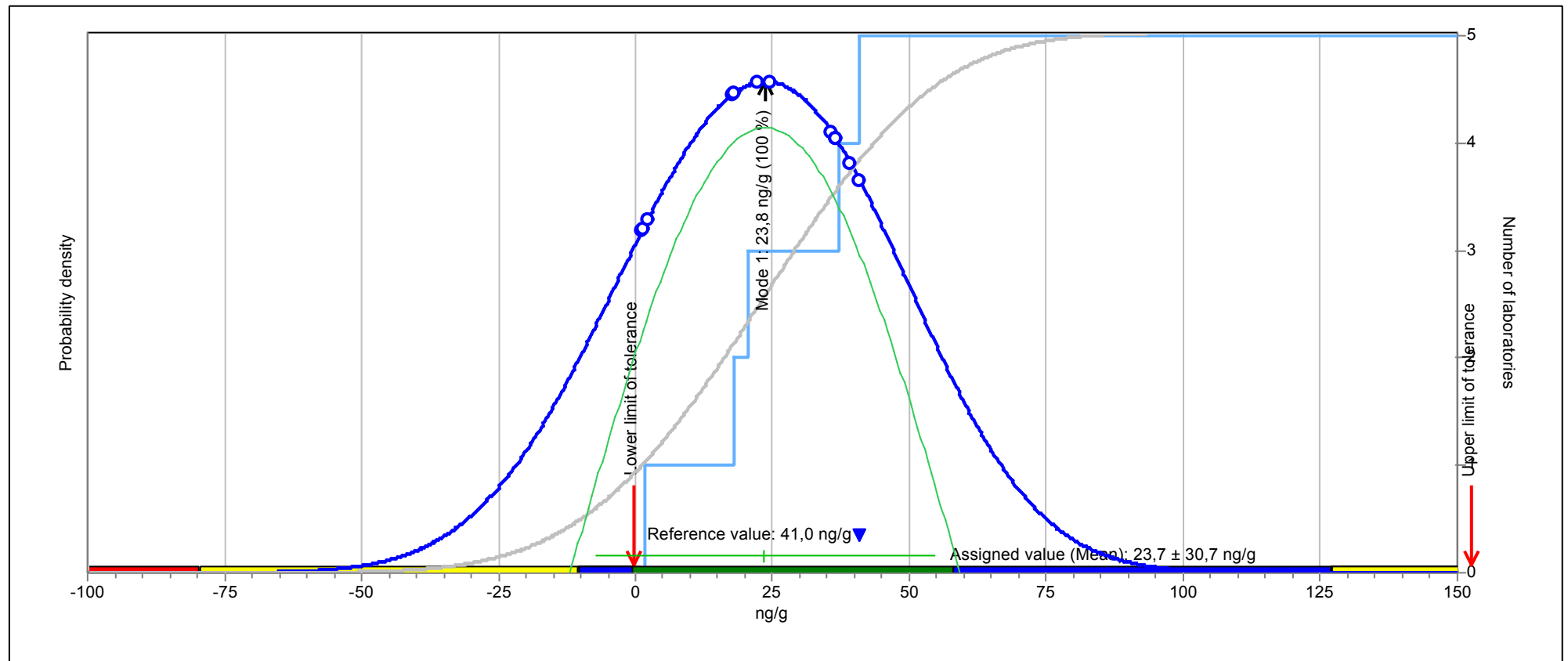


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Acenaphthylene

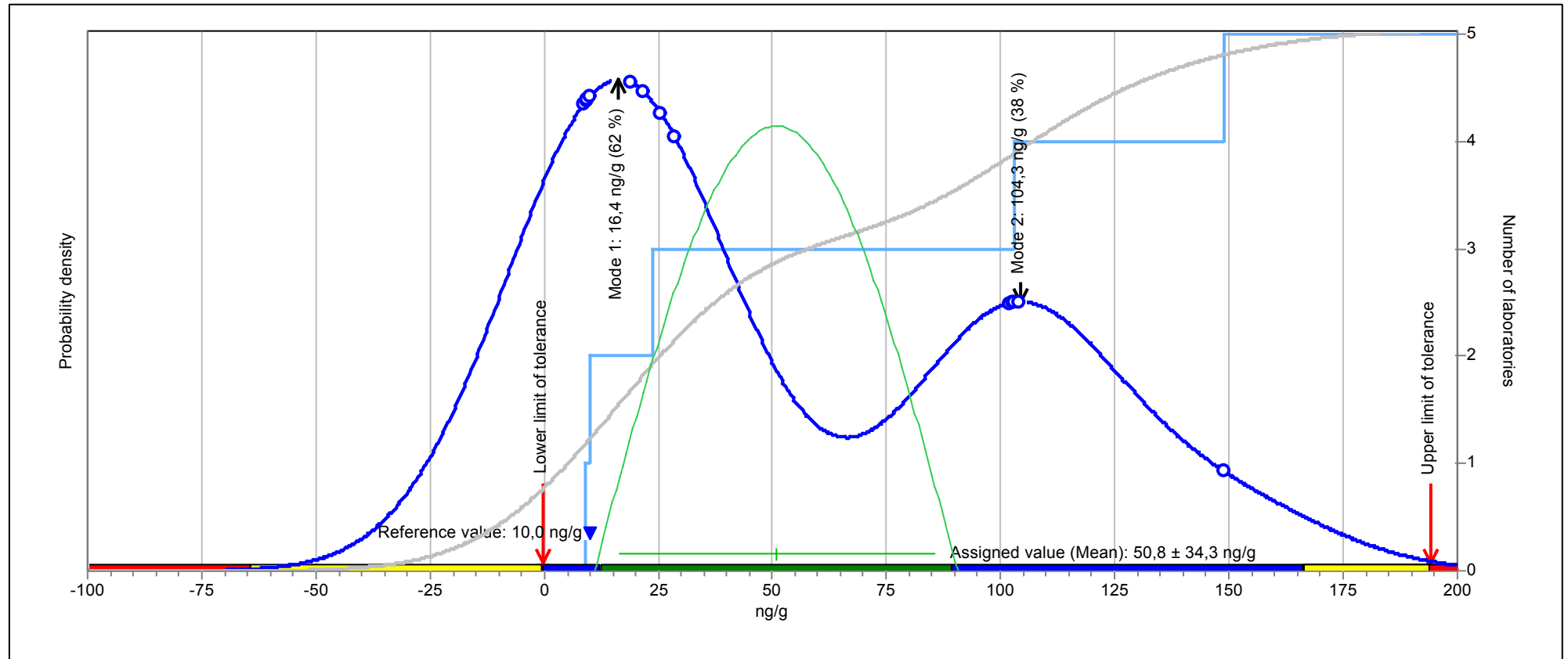


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Anthracene

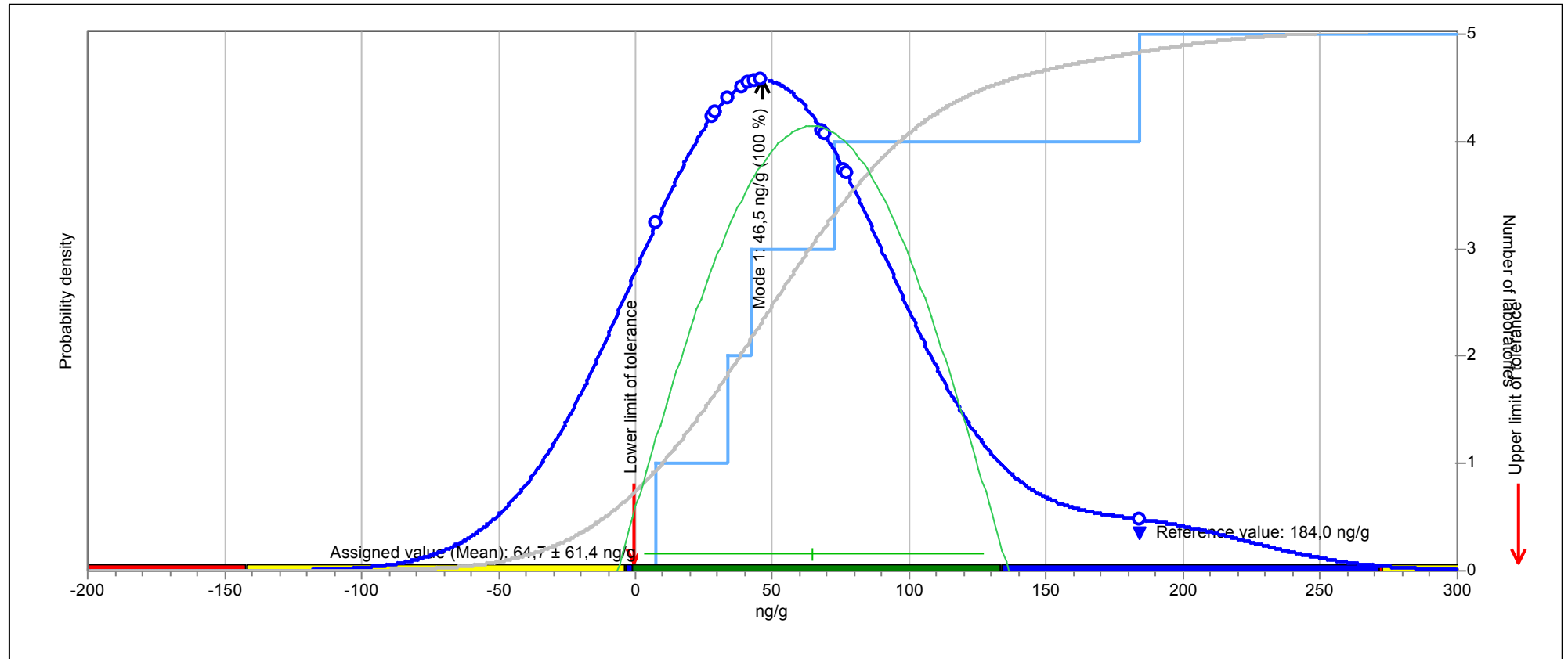


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Benzo[a]anthracene

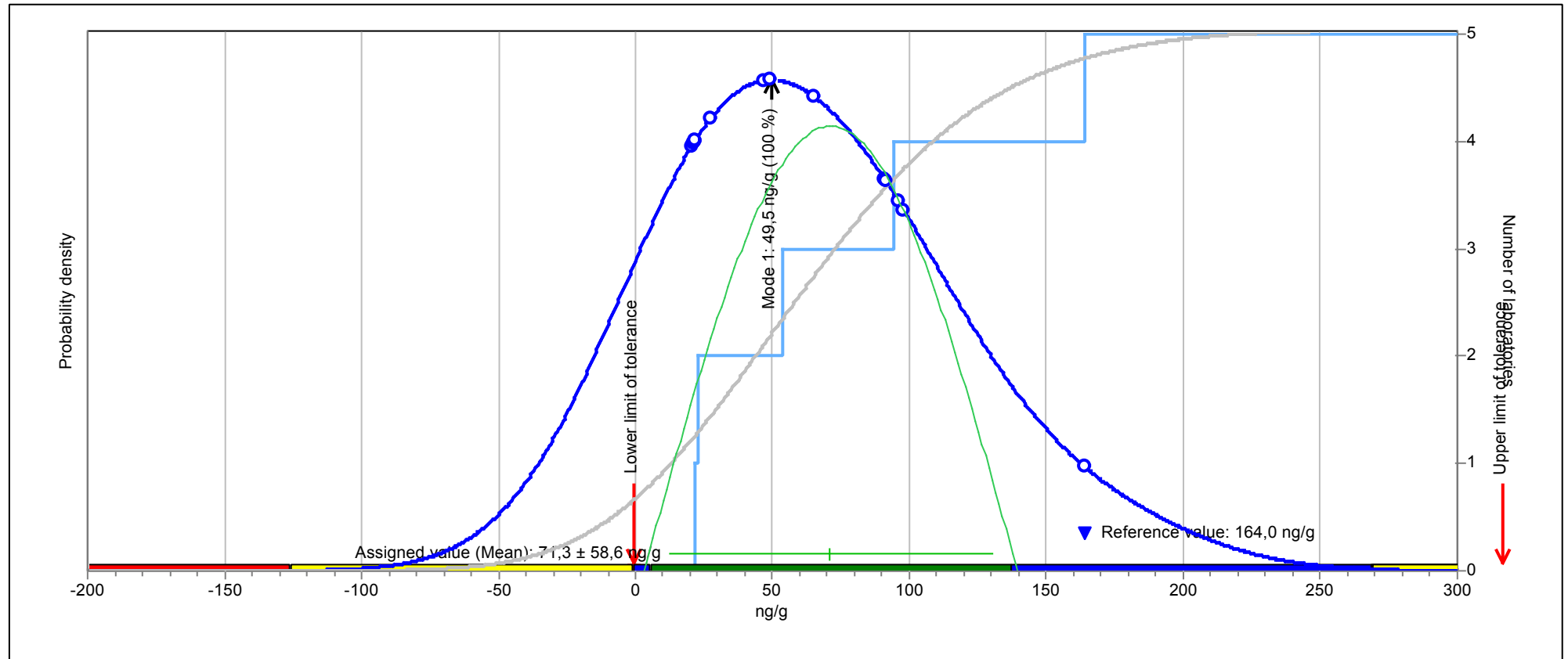


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Benzo[a]pyrene

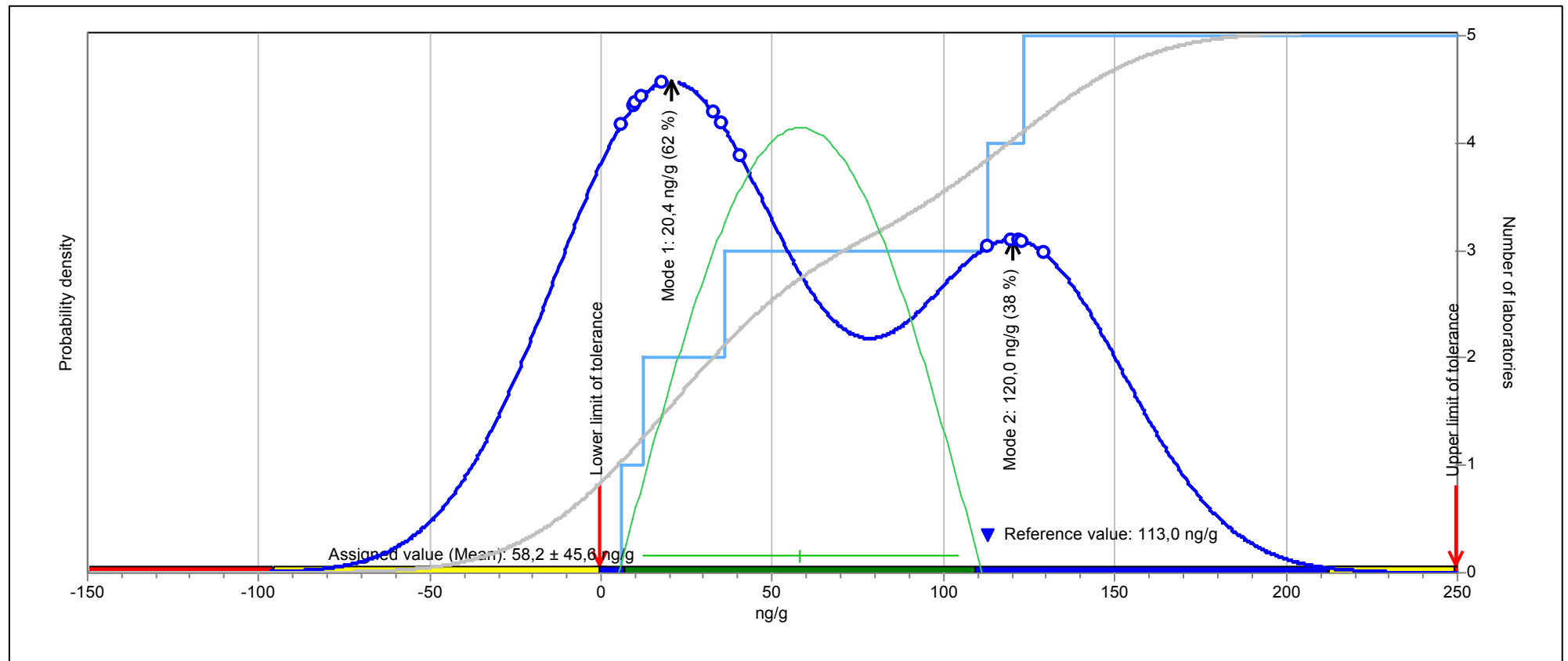


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Benzo[b]fluoranthene

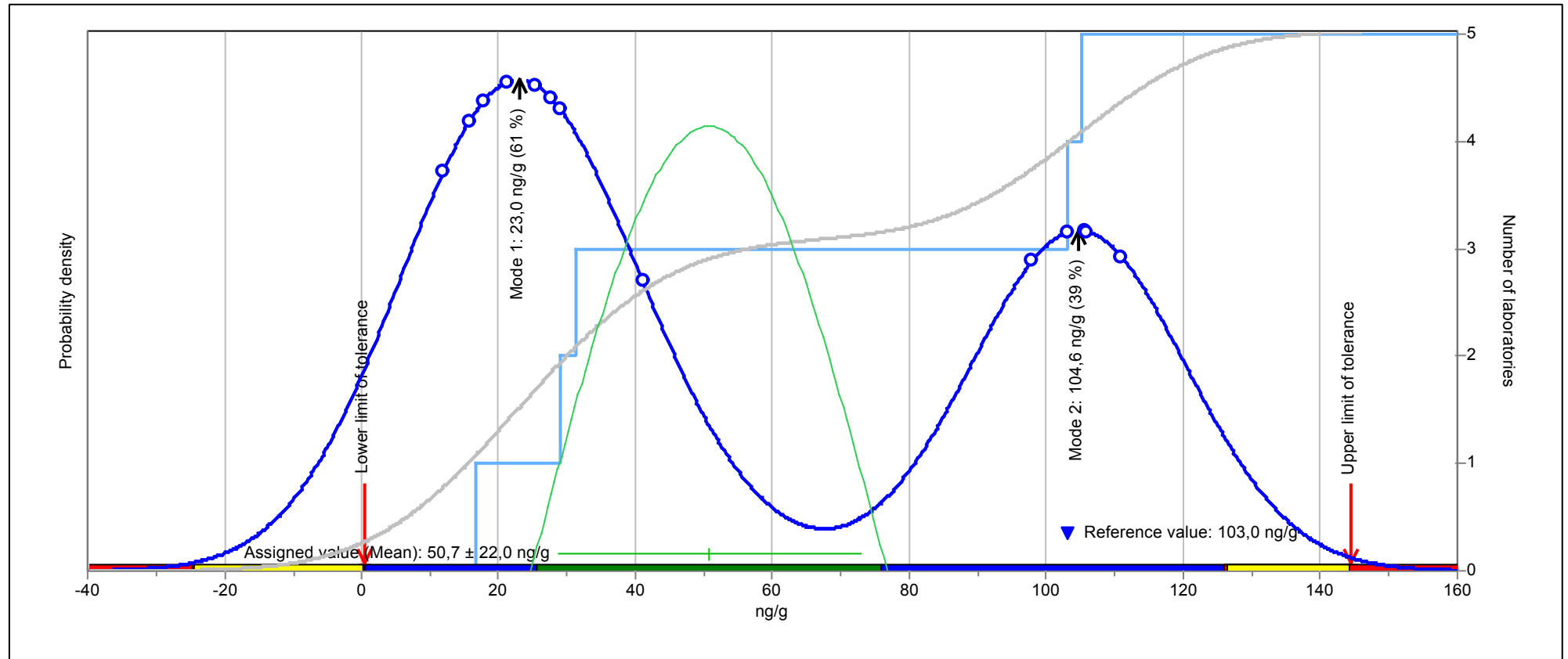


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Benzo[k]fluoranthene

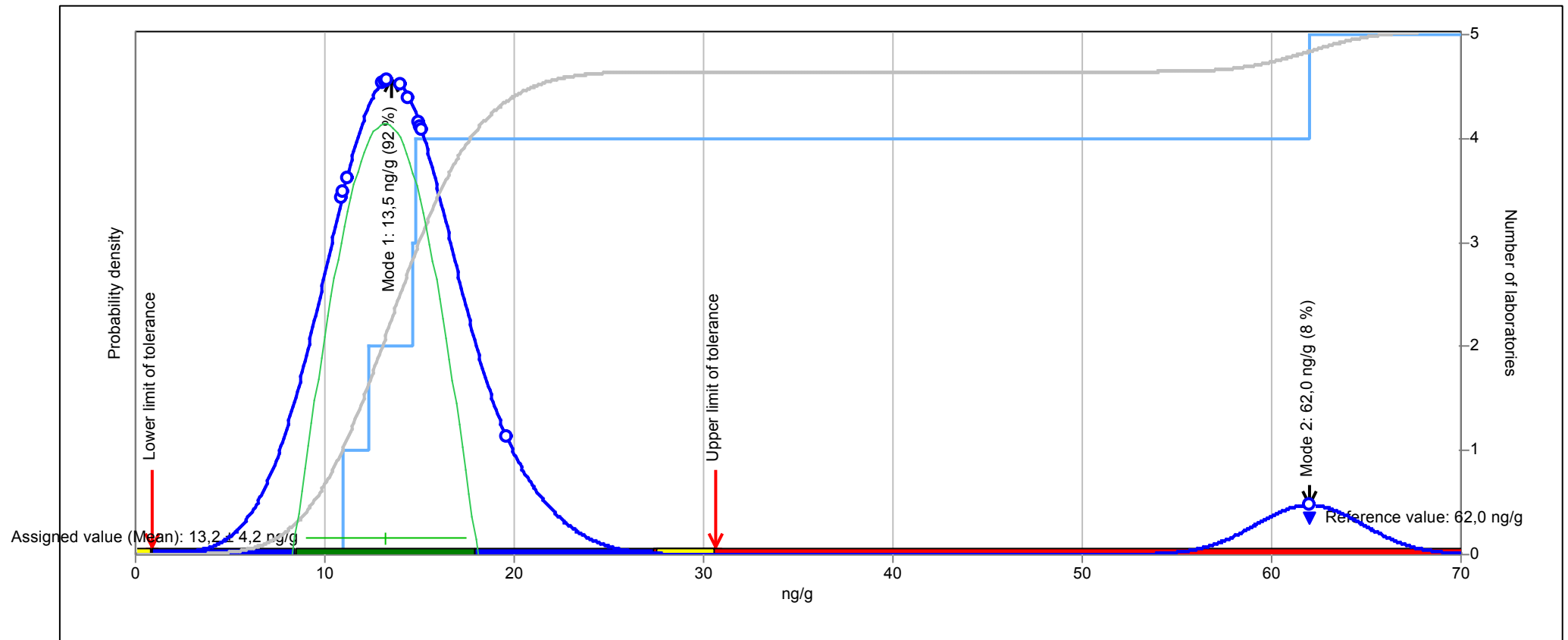


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Benzo[ghi]perylene

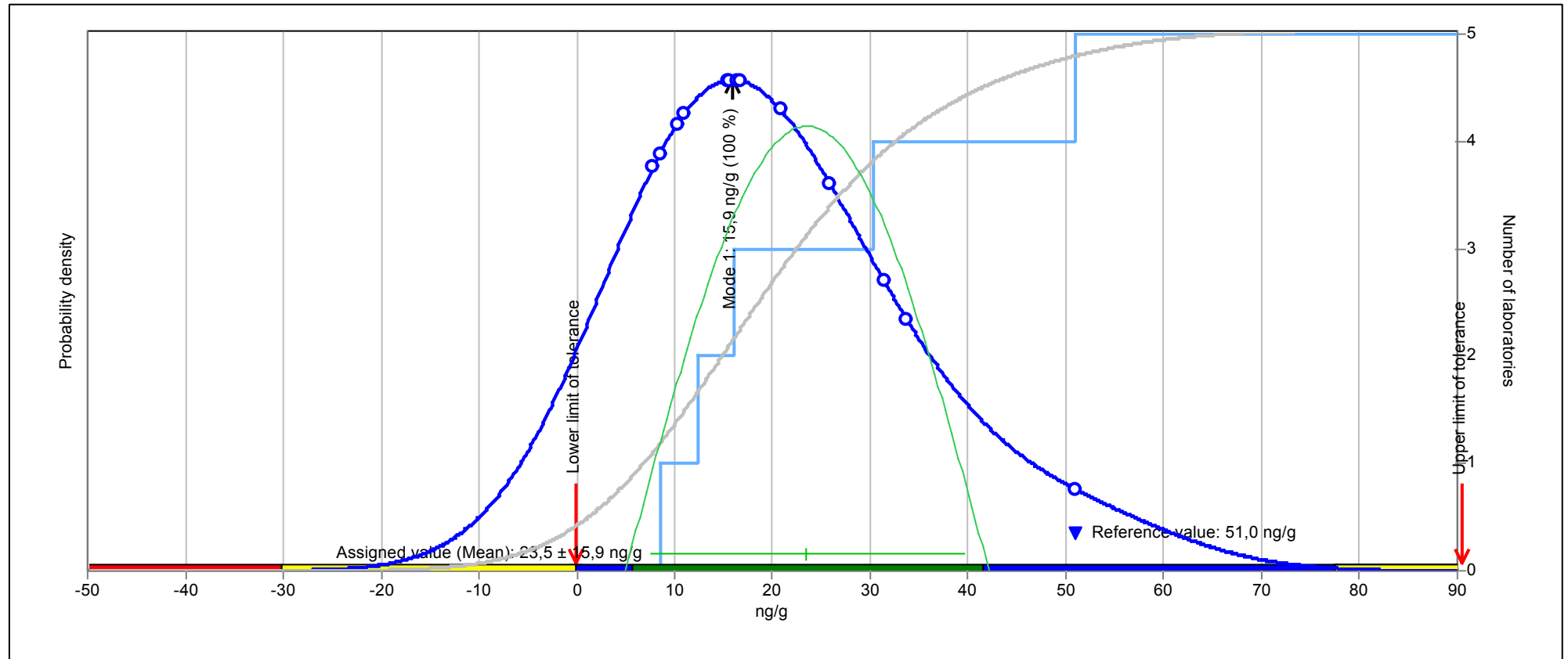


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Chrysene

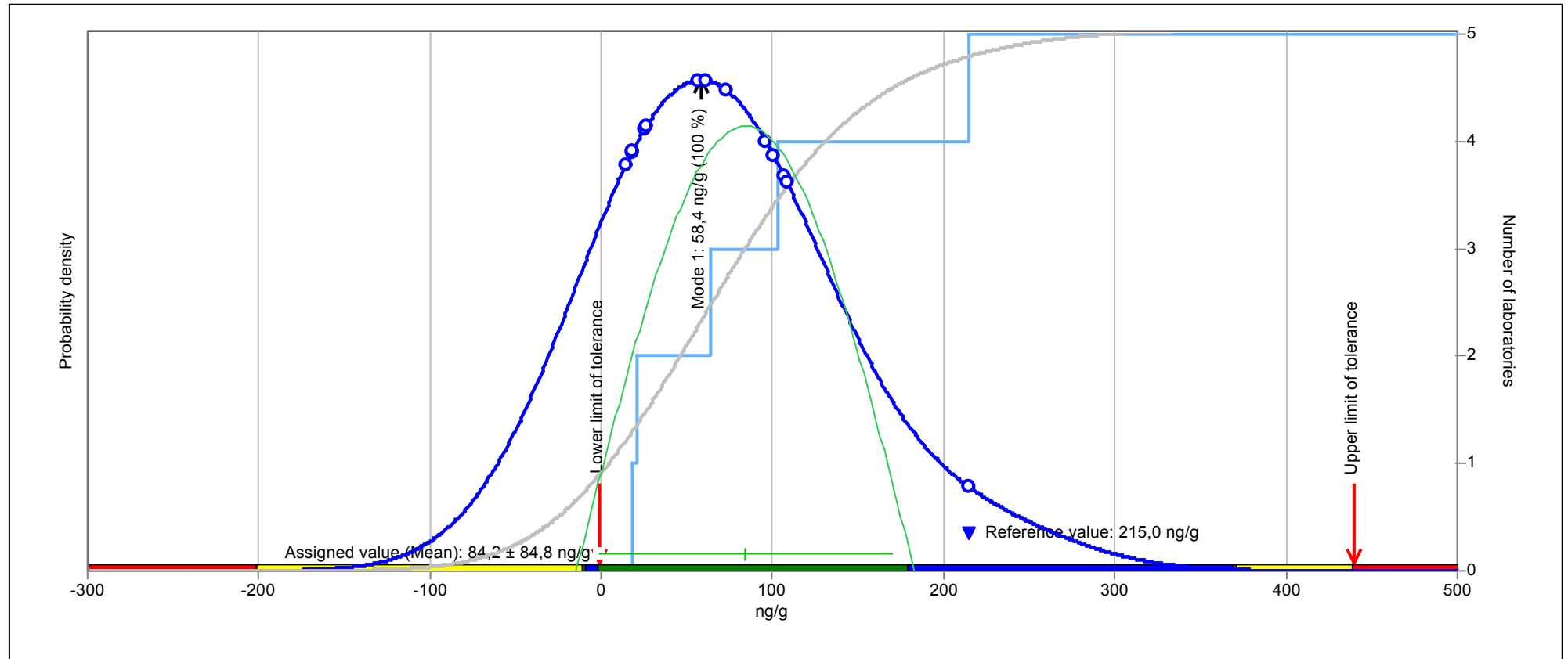


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Dibenzo[a,h]anthracene

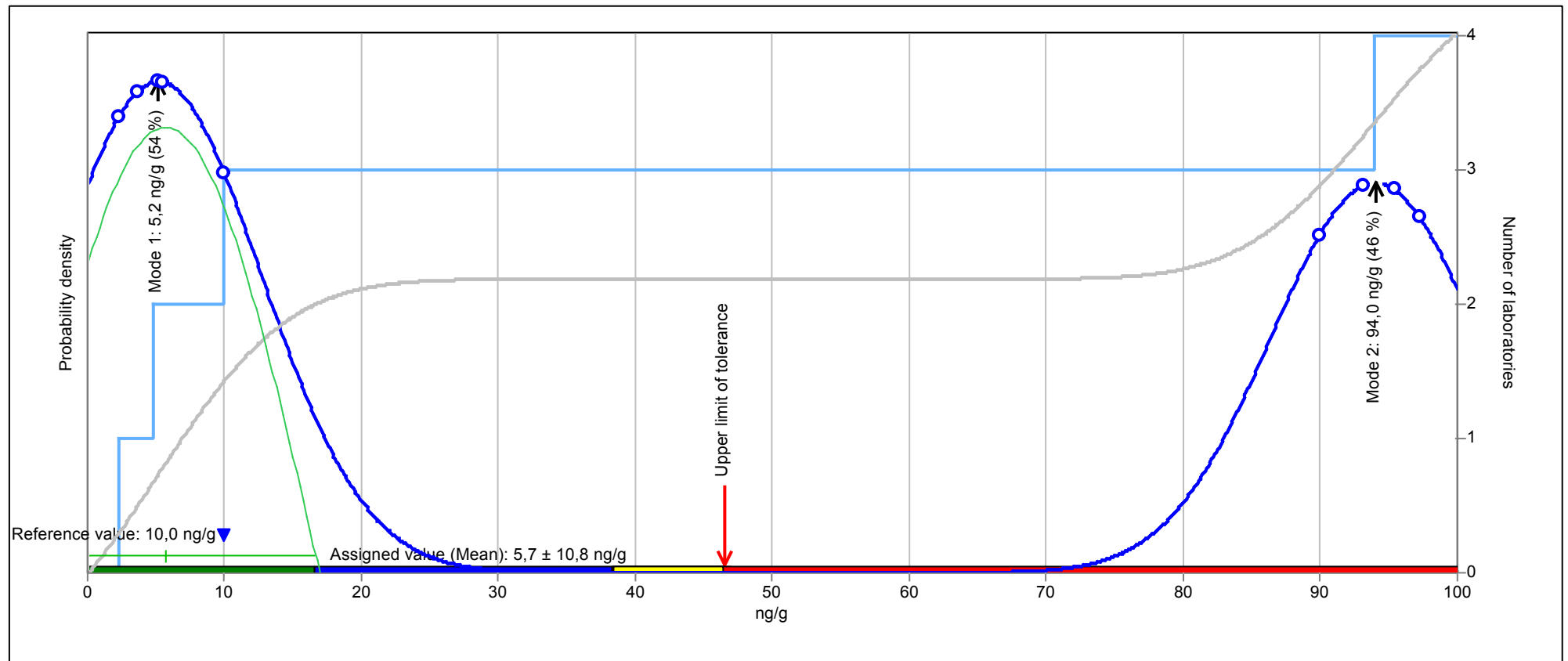


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Fluoranthene

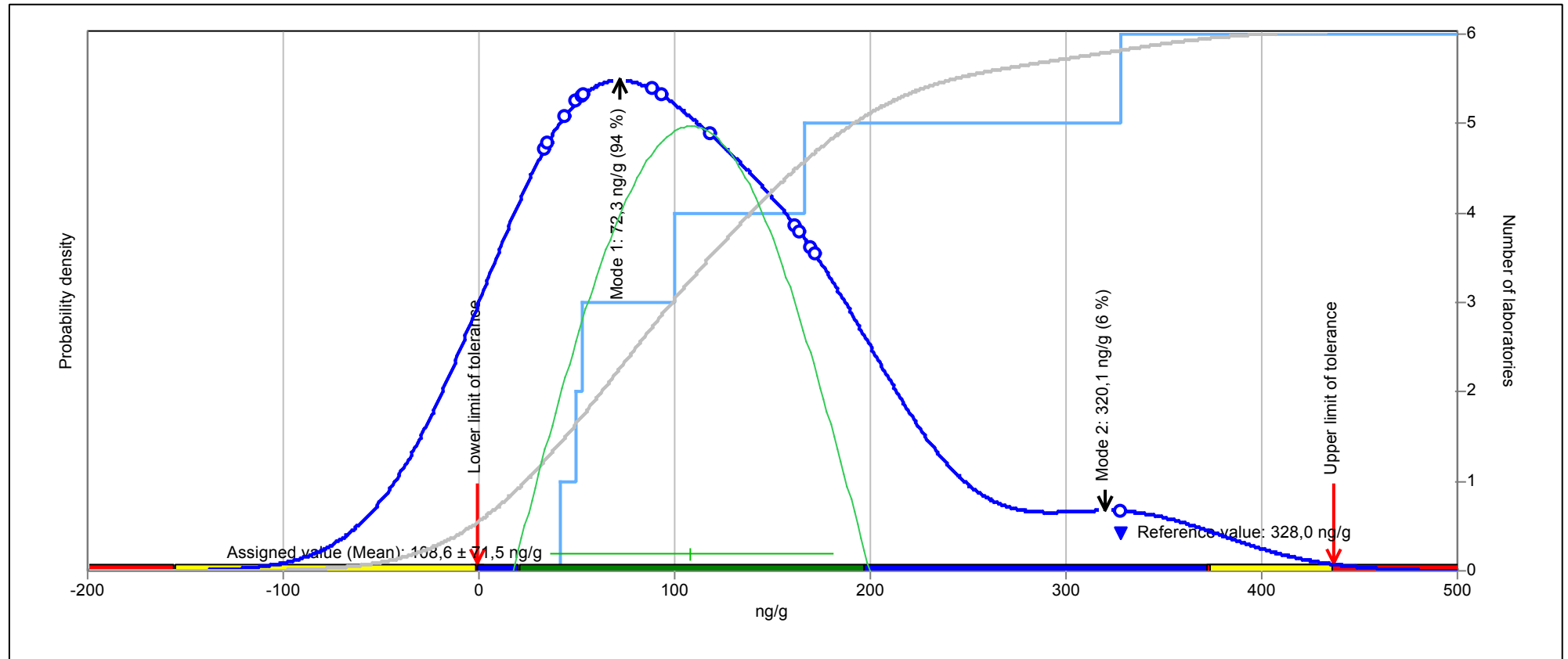


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Fluorene

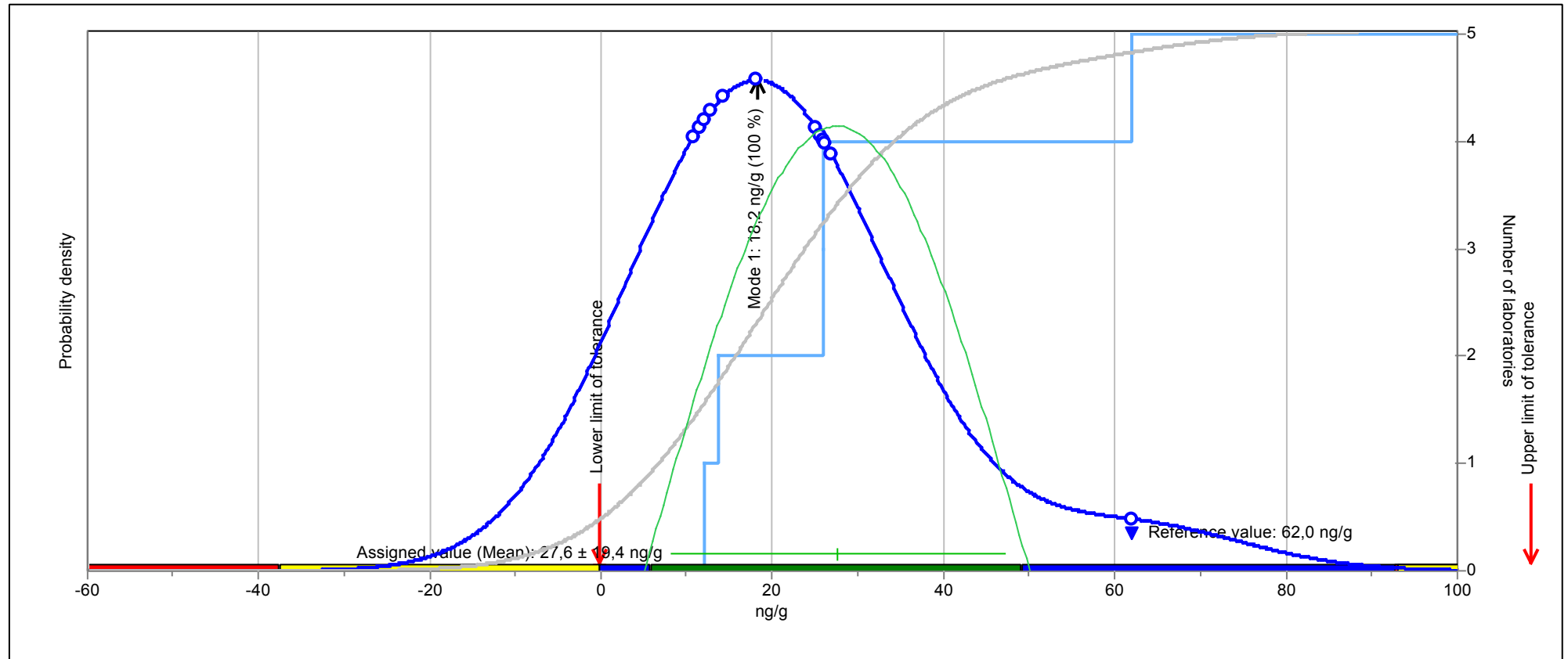


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Indeno[1,2,3-cd]pyrene

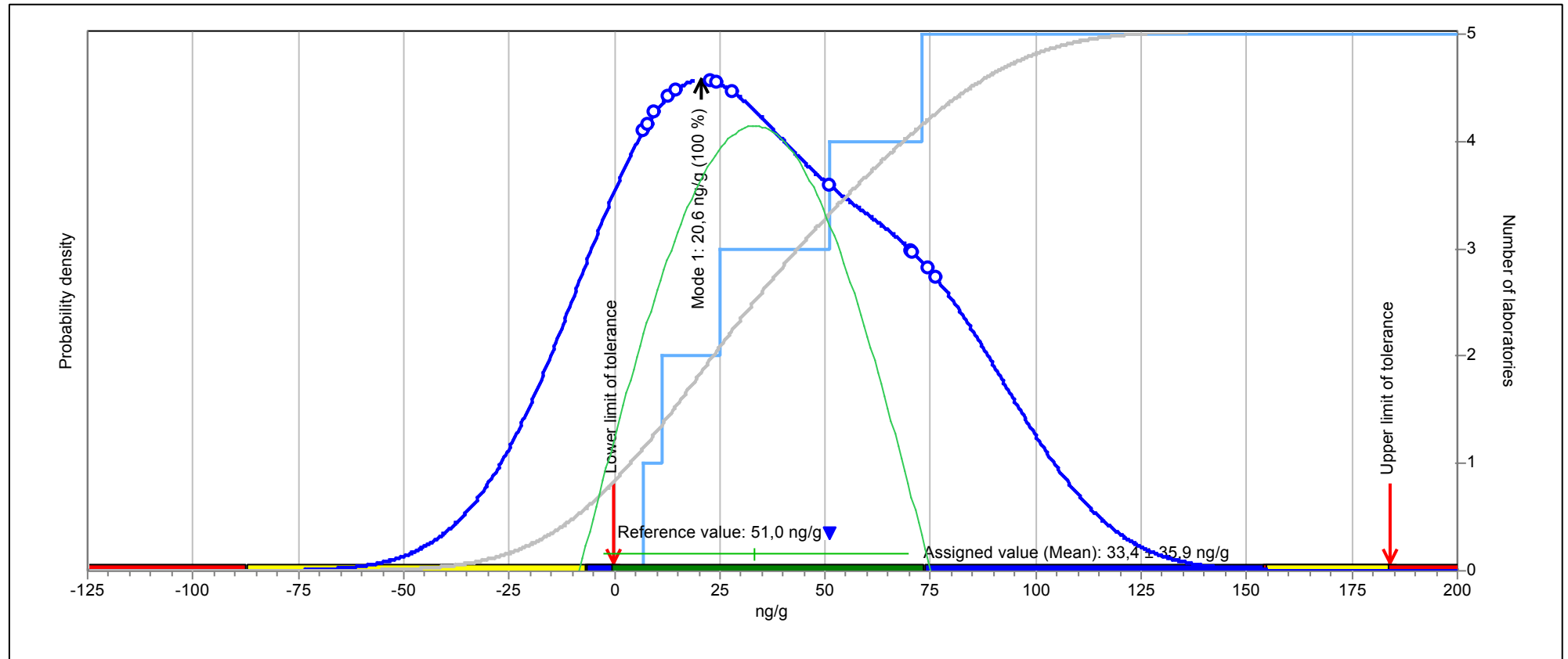


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Naphthalene

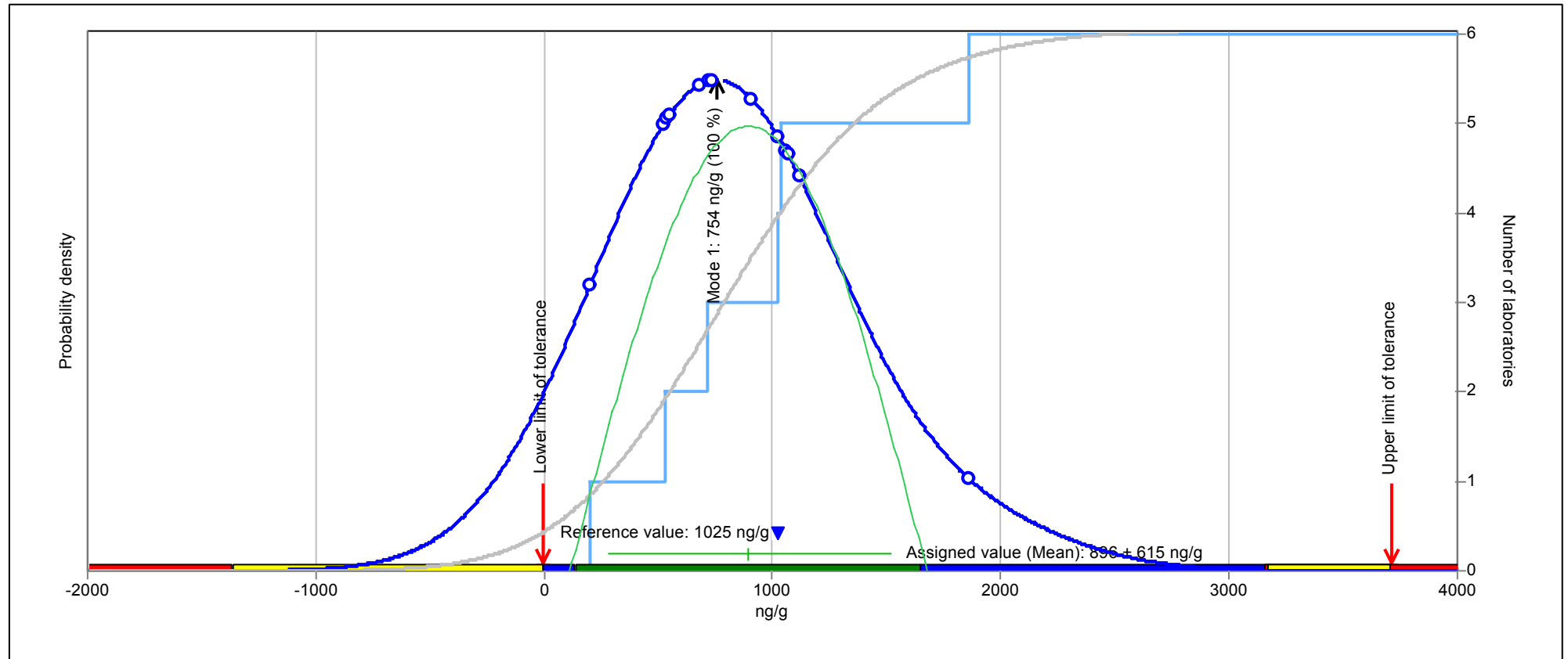


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Phenanthrene

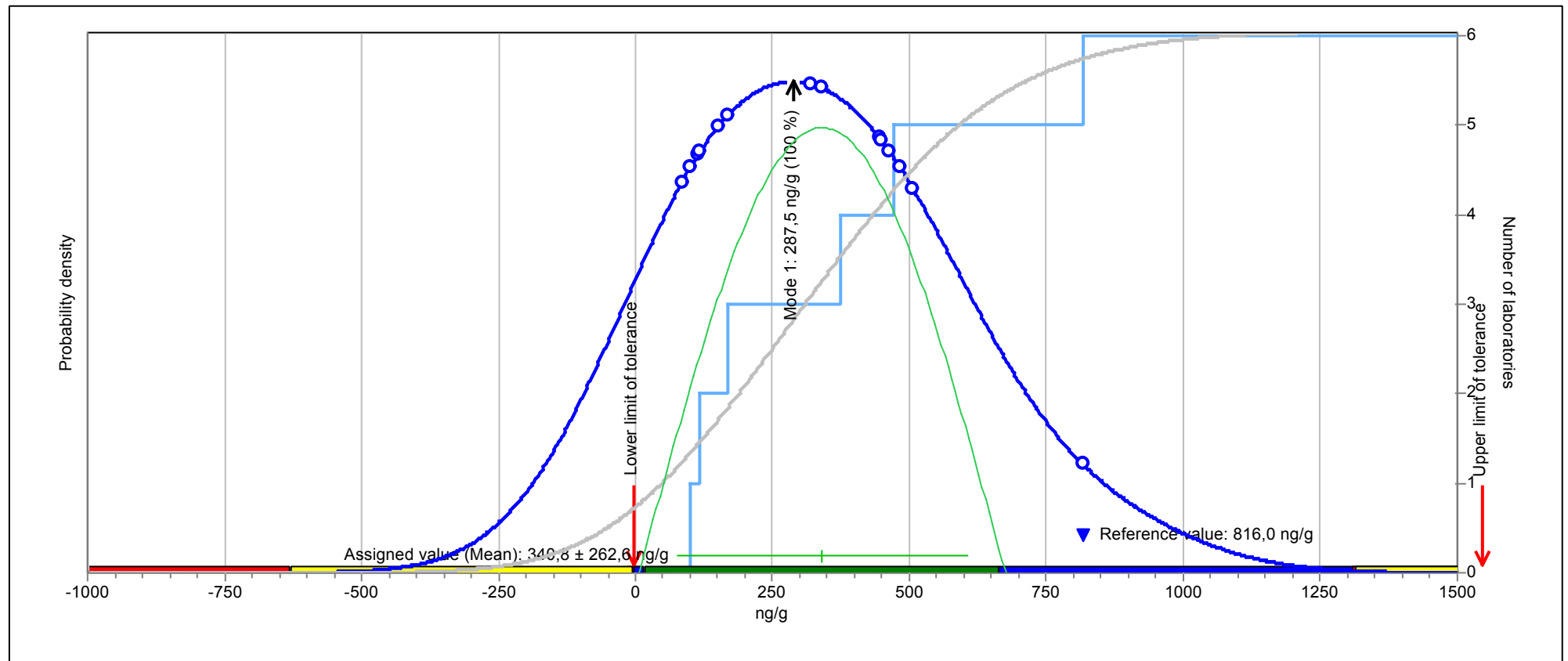


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: PAH_Pyrene

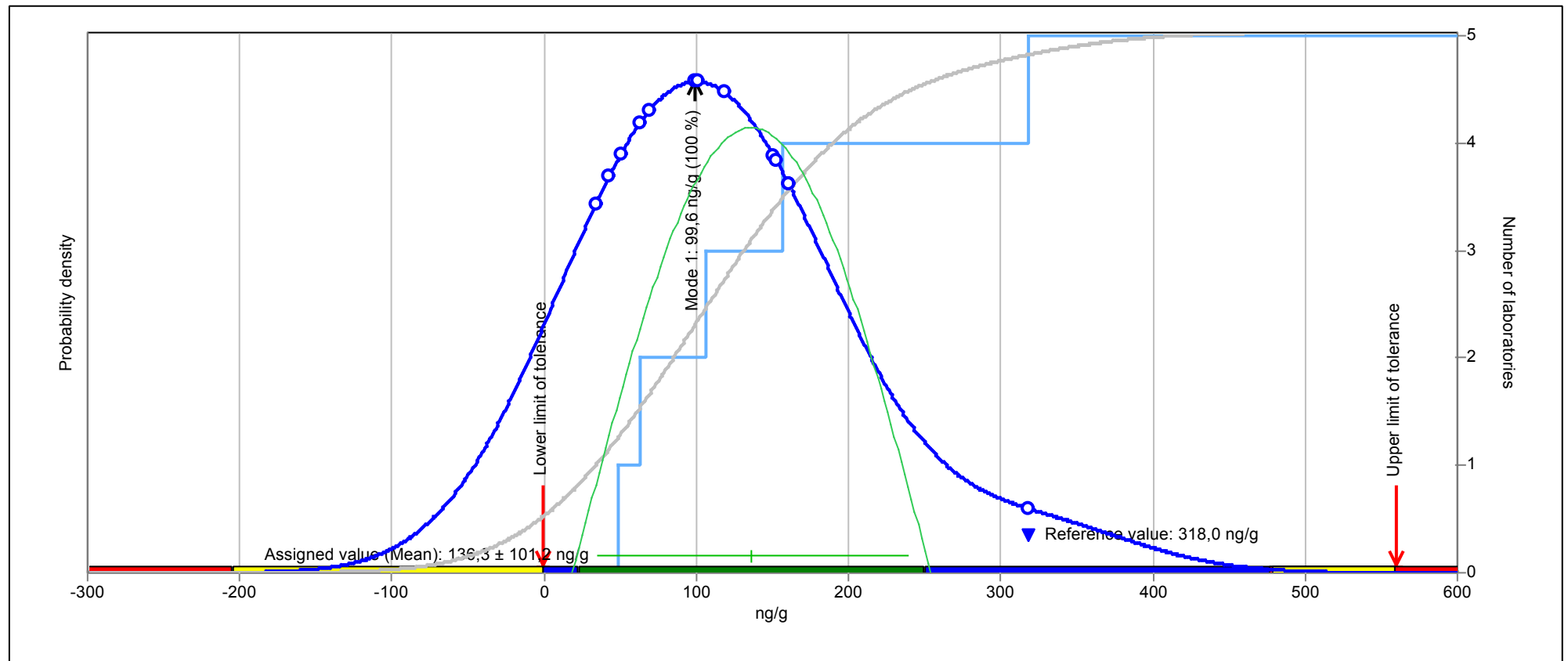


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: Pb

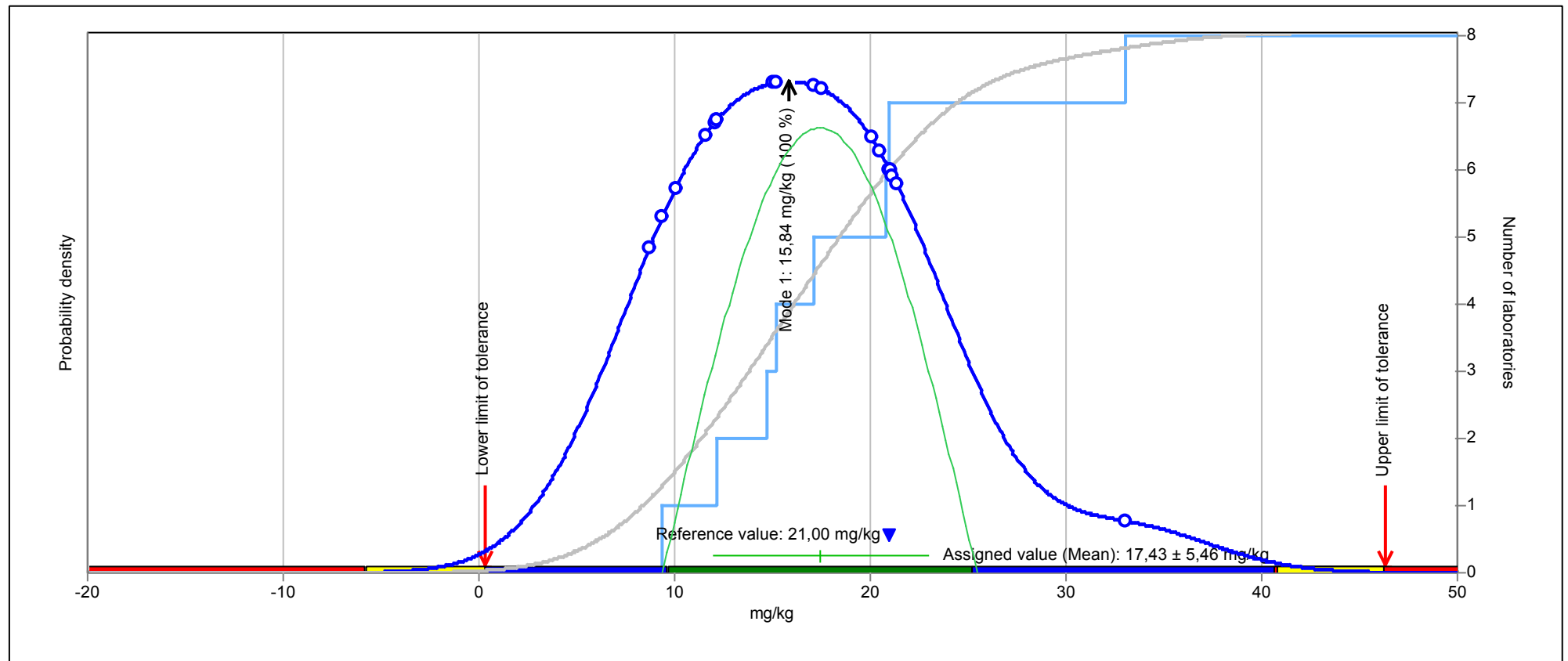


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: pH

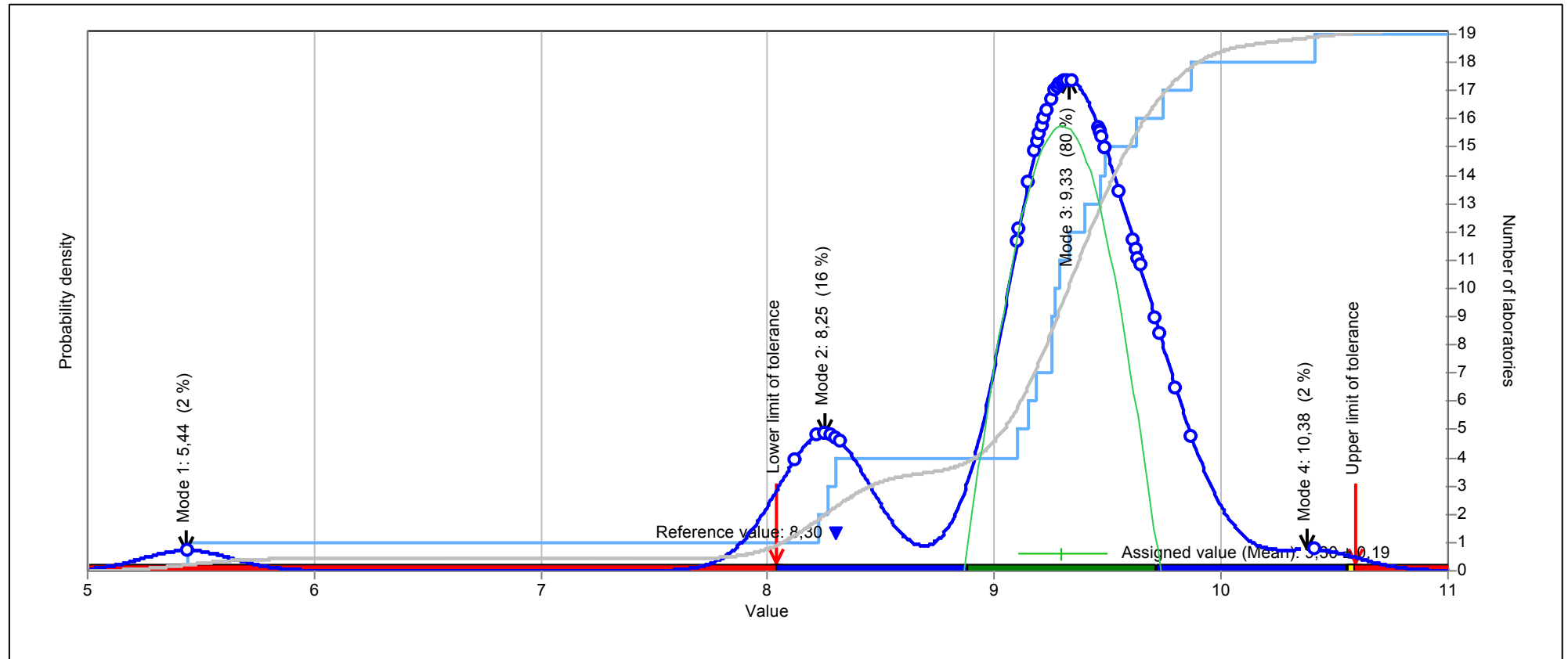


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: S

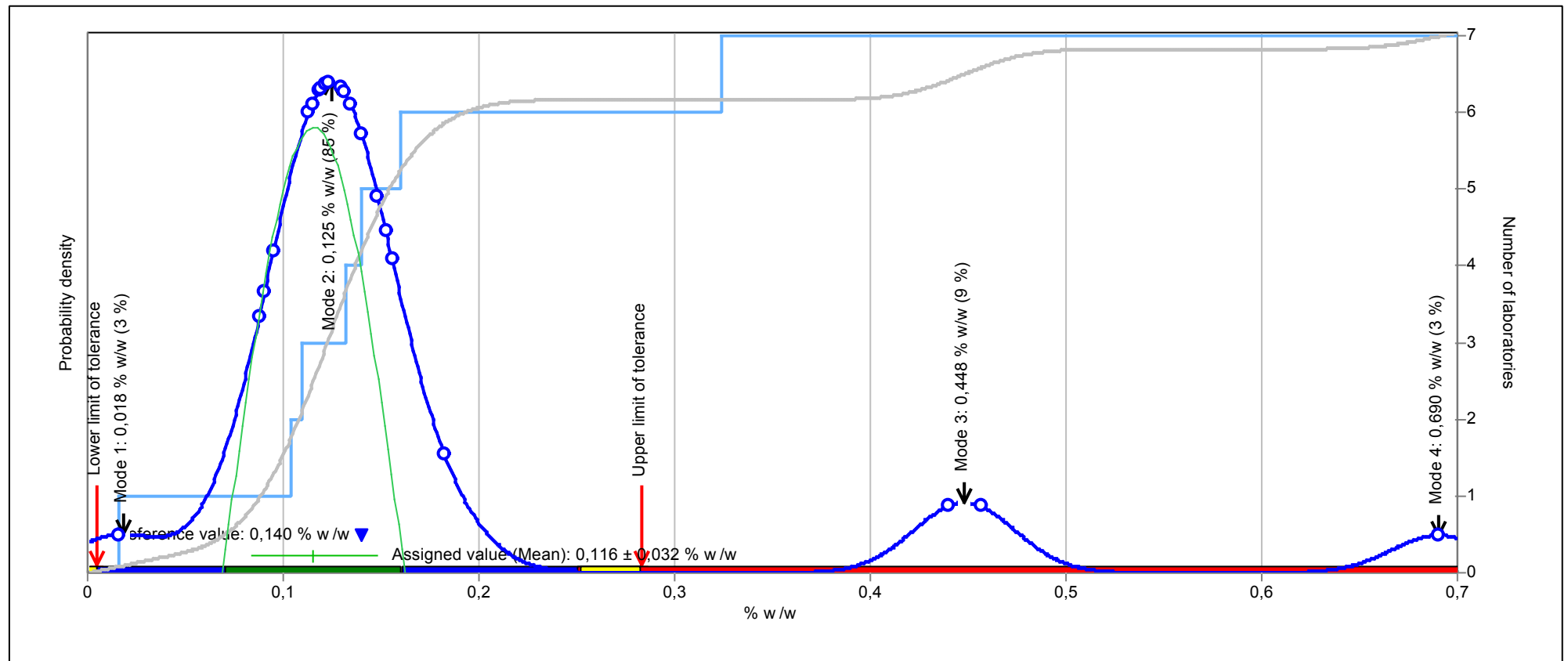


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: S_ICP-OES

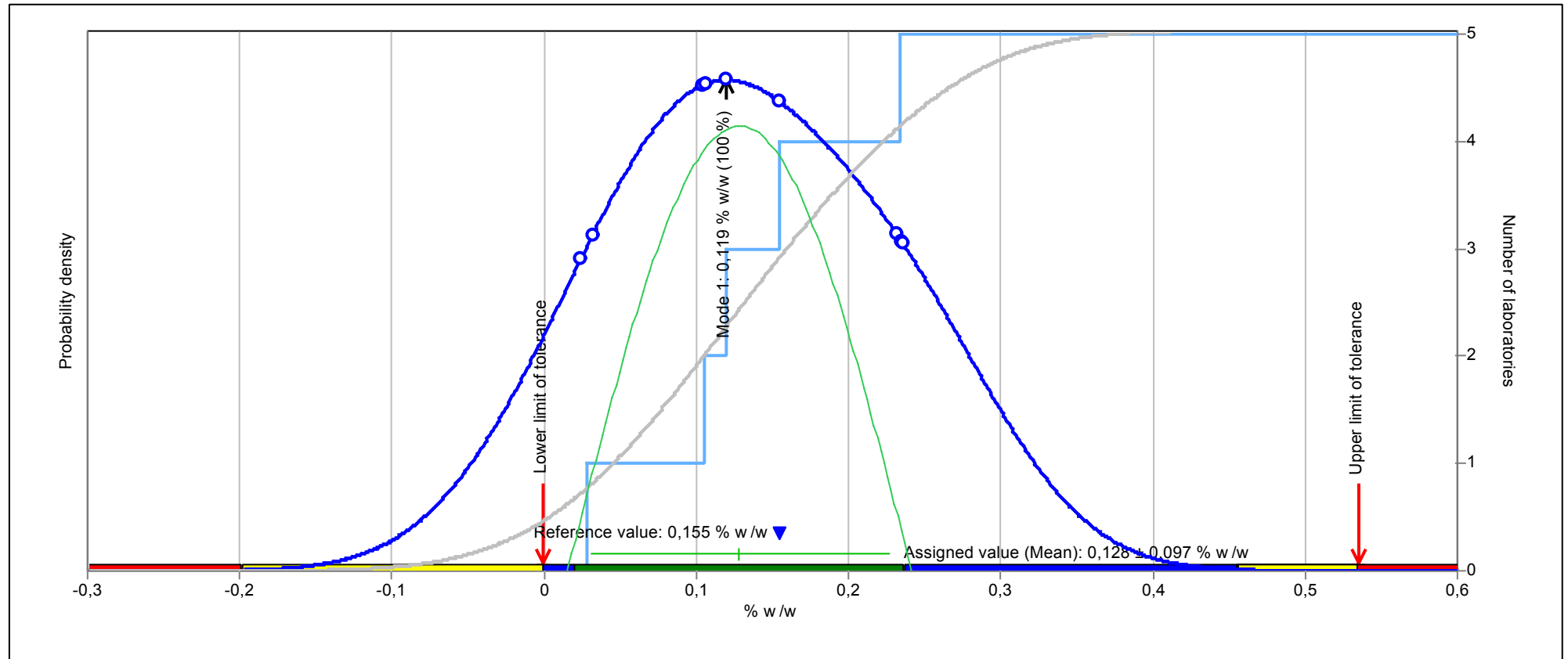


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2
Parameter: Specific_surface_area

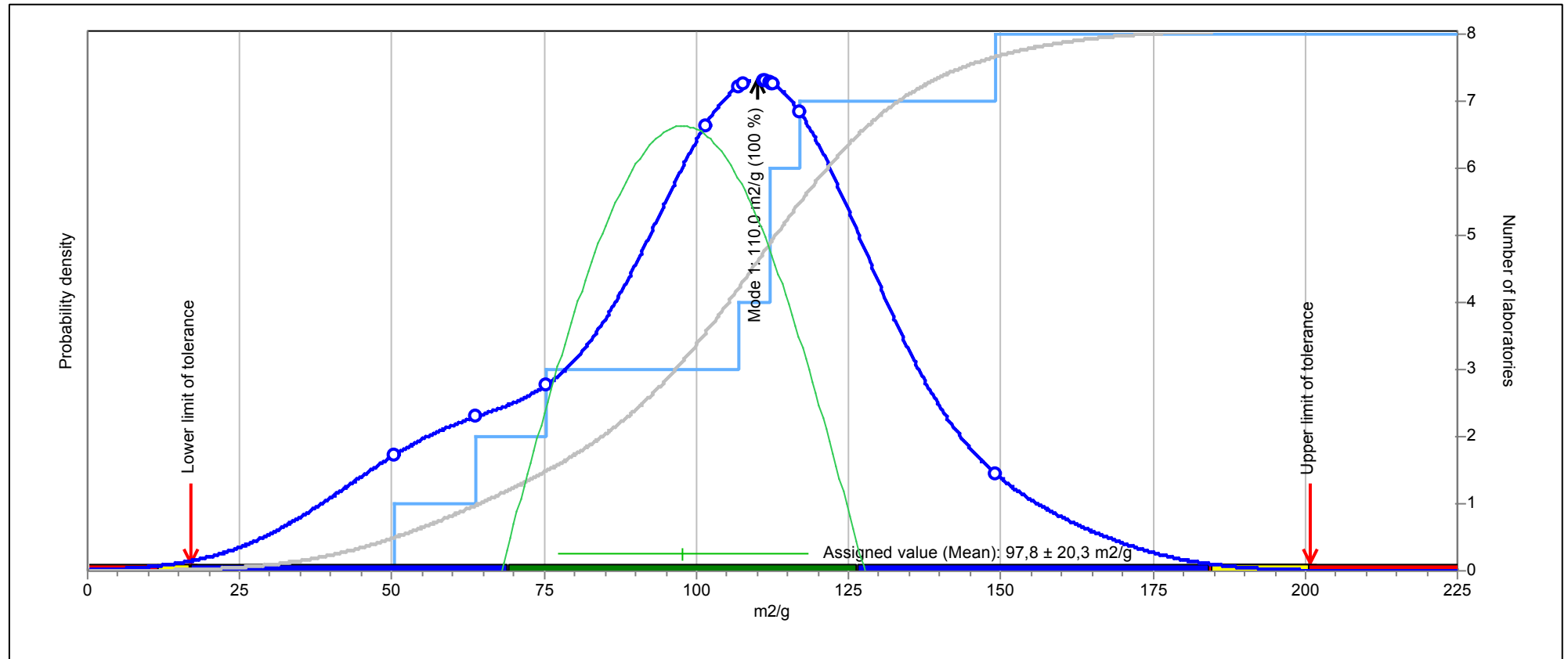


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC2

Parameter: Zn

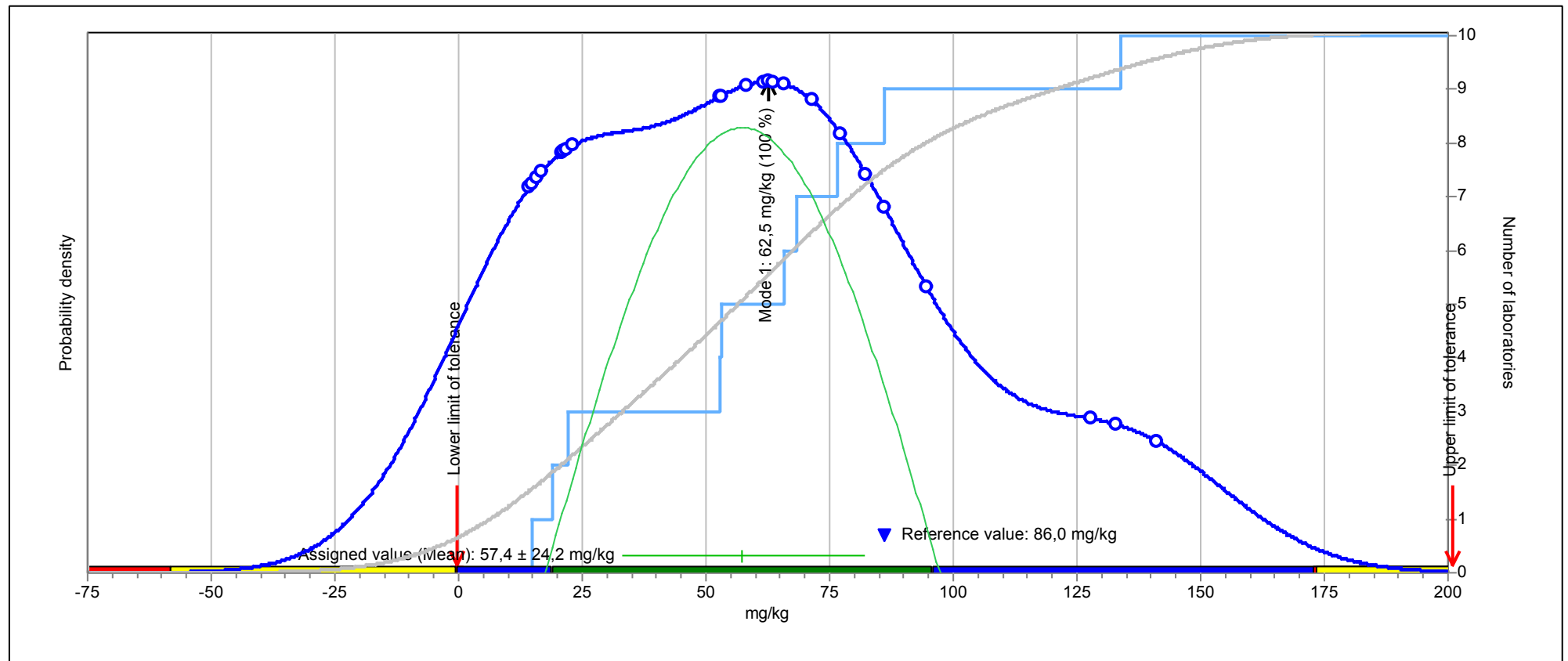


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: Ash

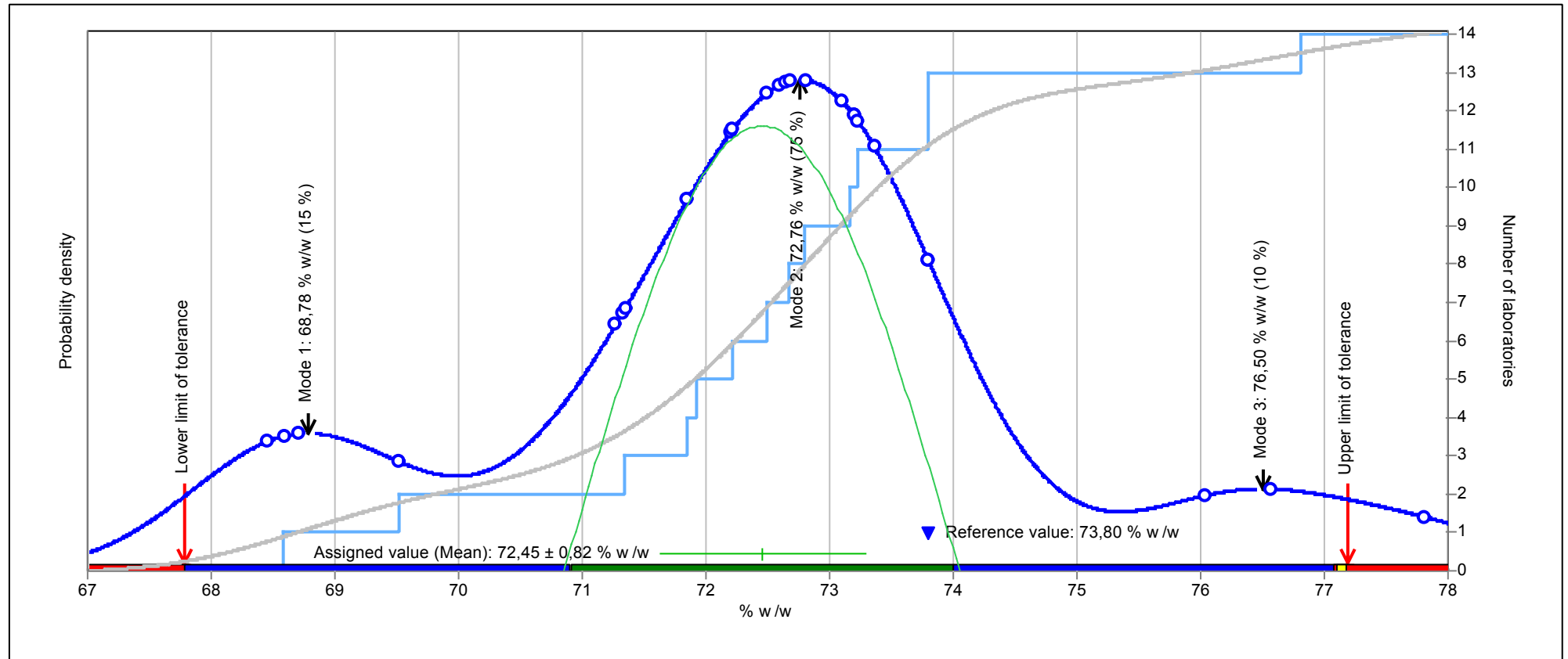


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: C

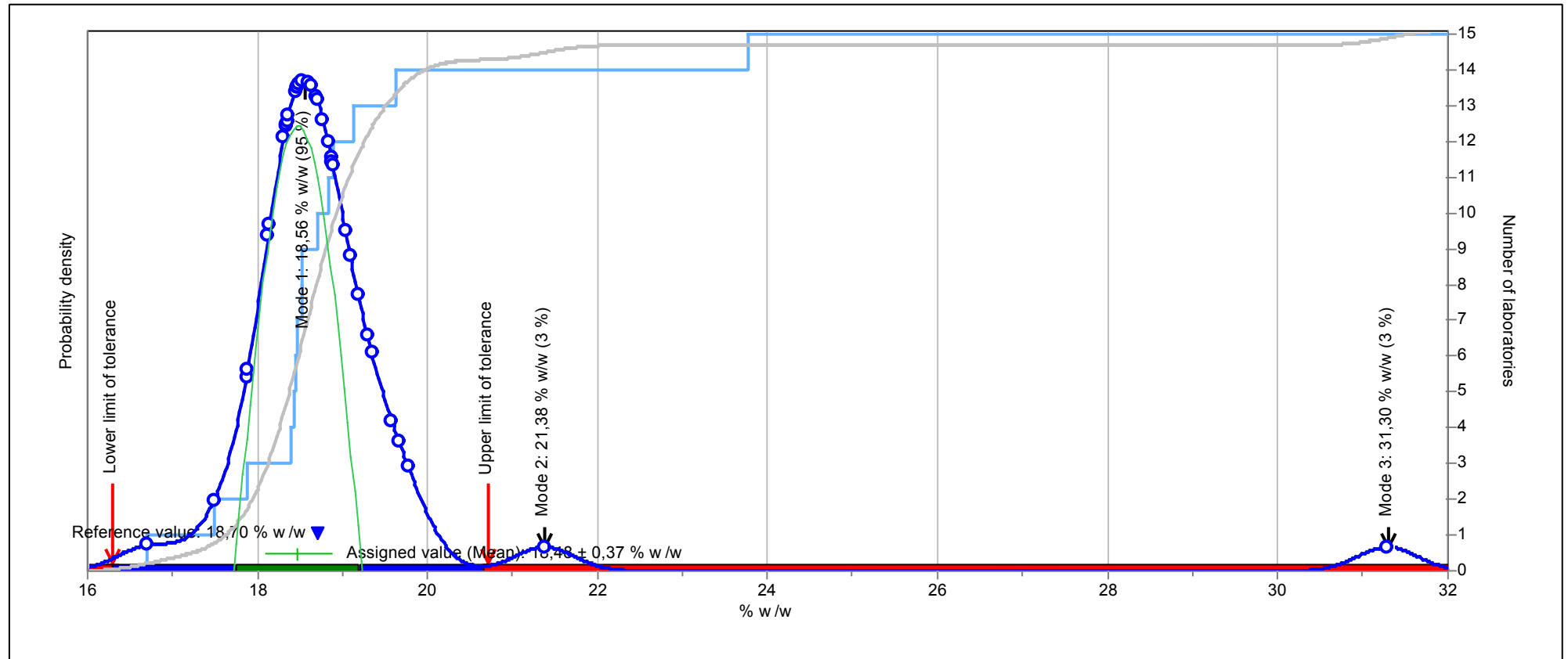


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: Ca

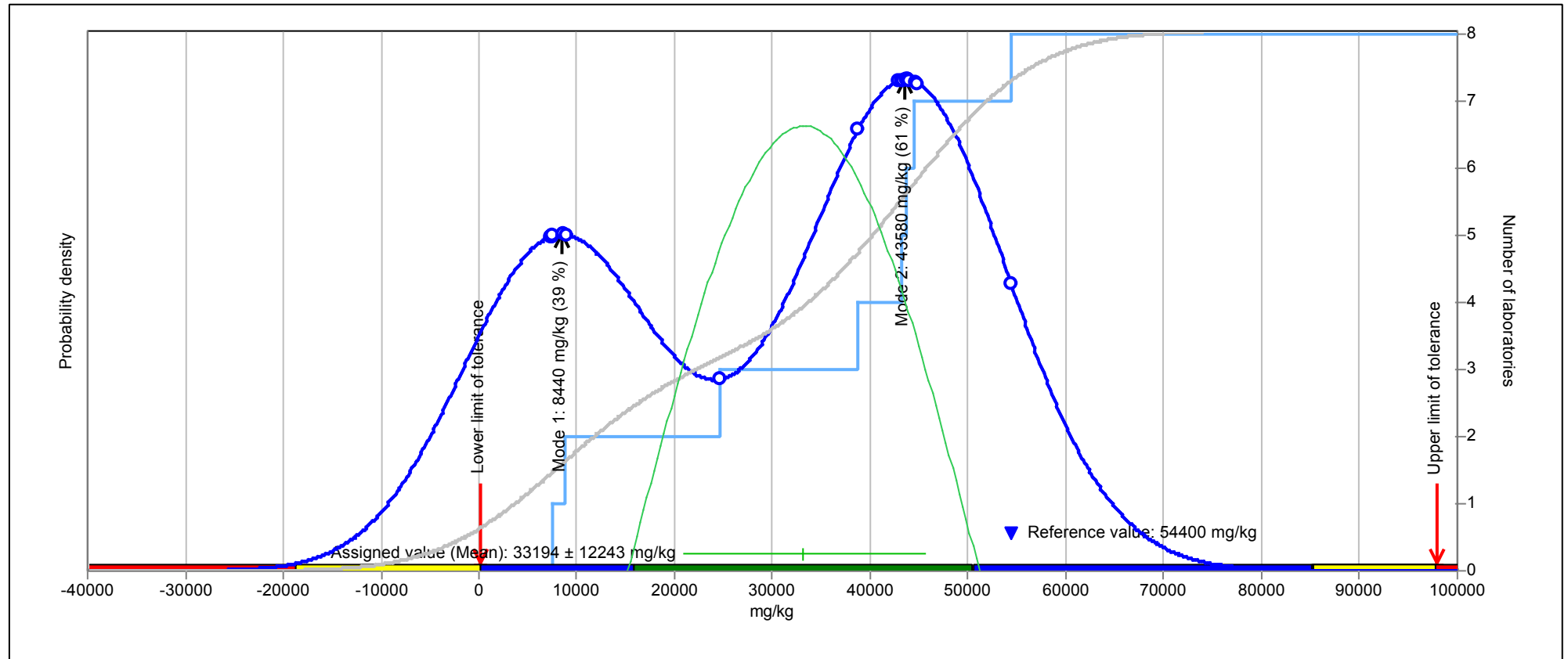


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: Cd

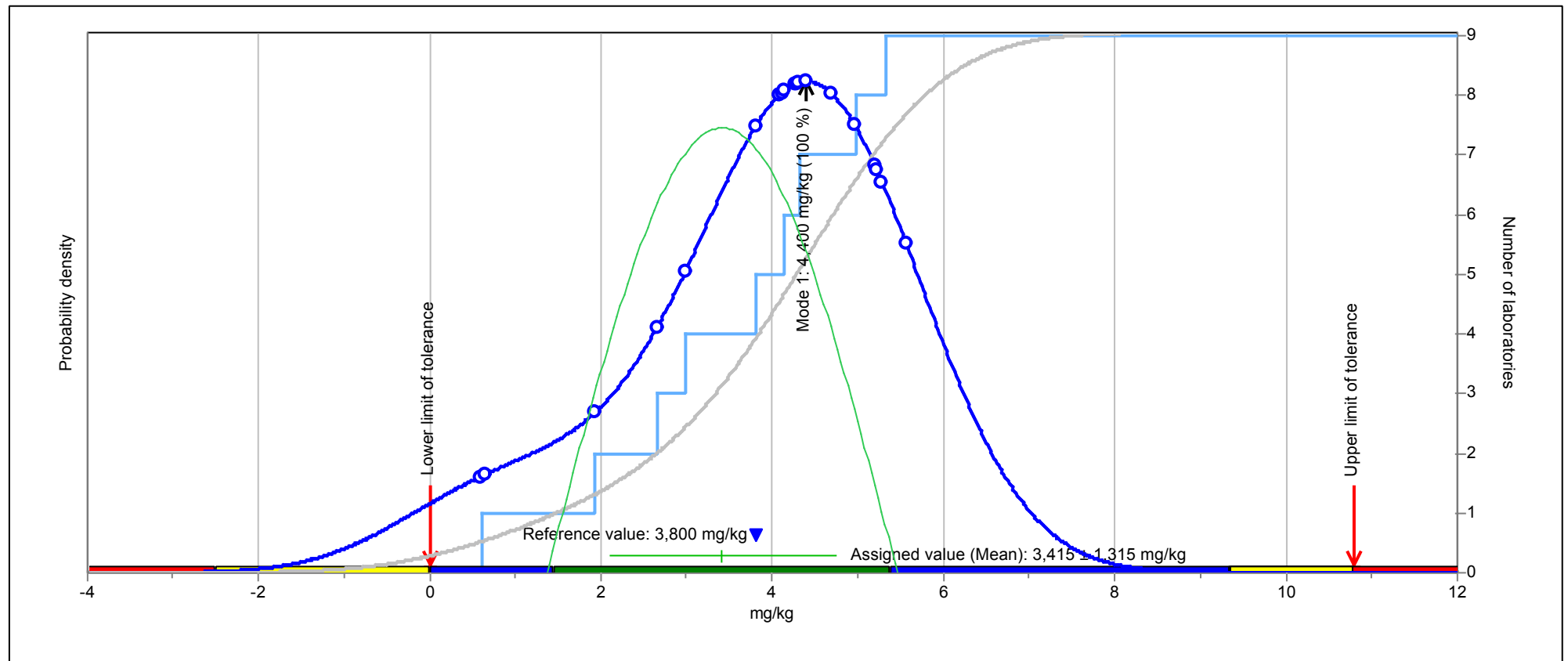


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: Cr

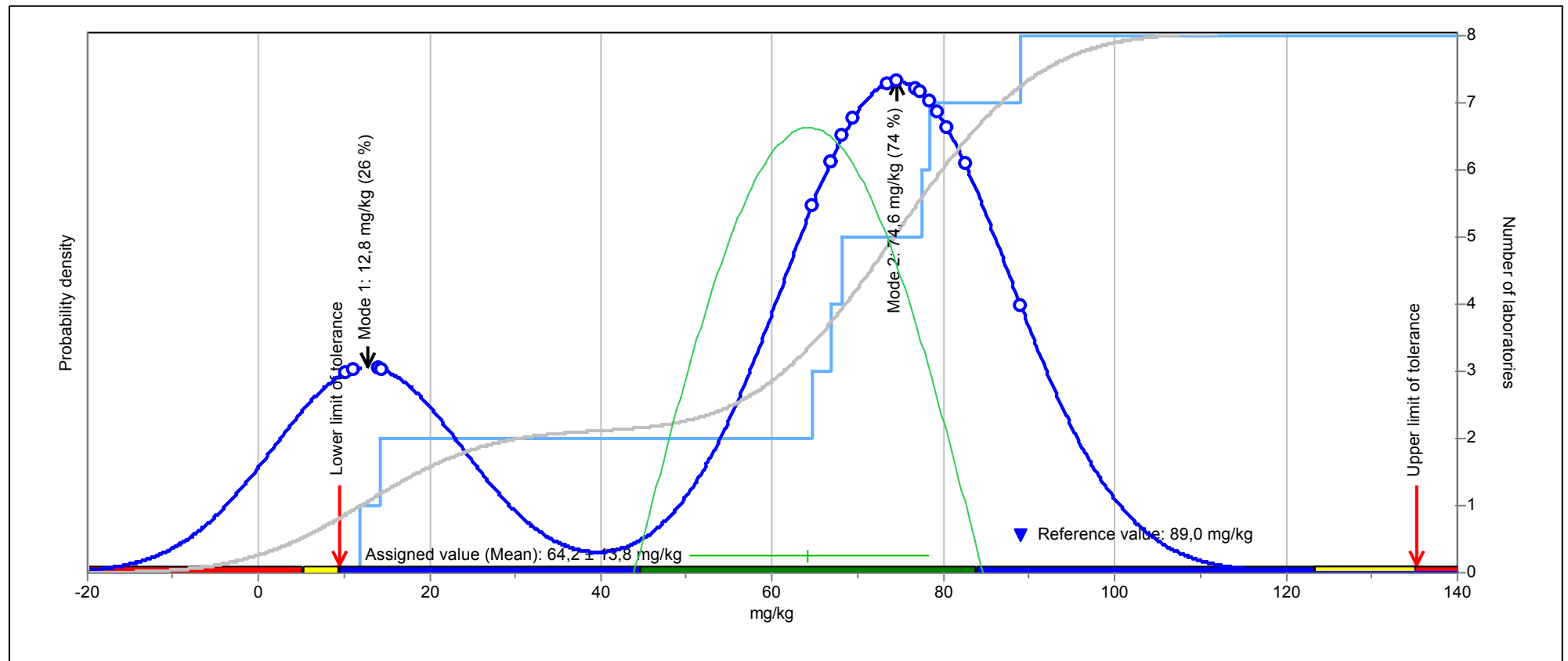


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: Cu

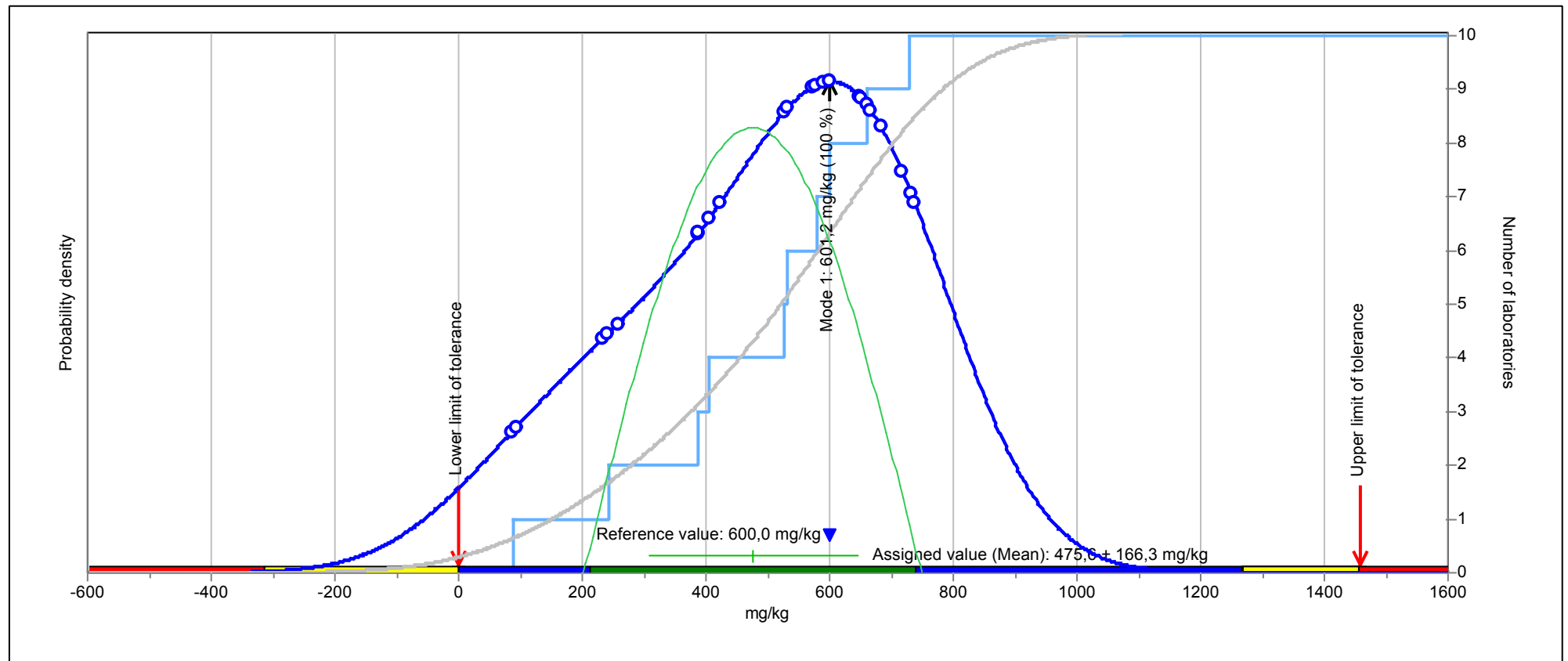


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: EC

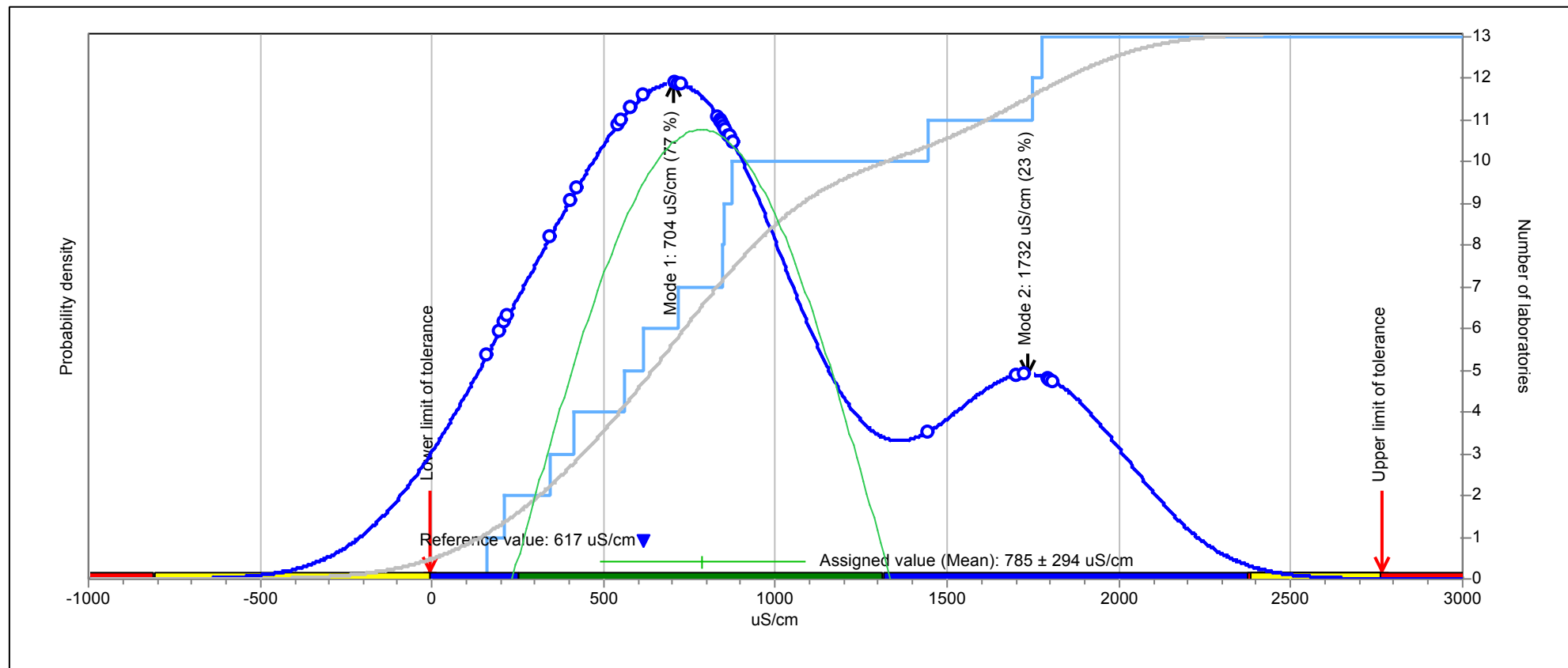


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: Fe

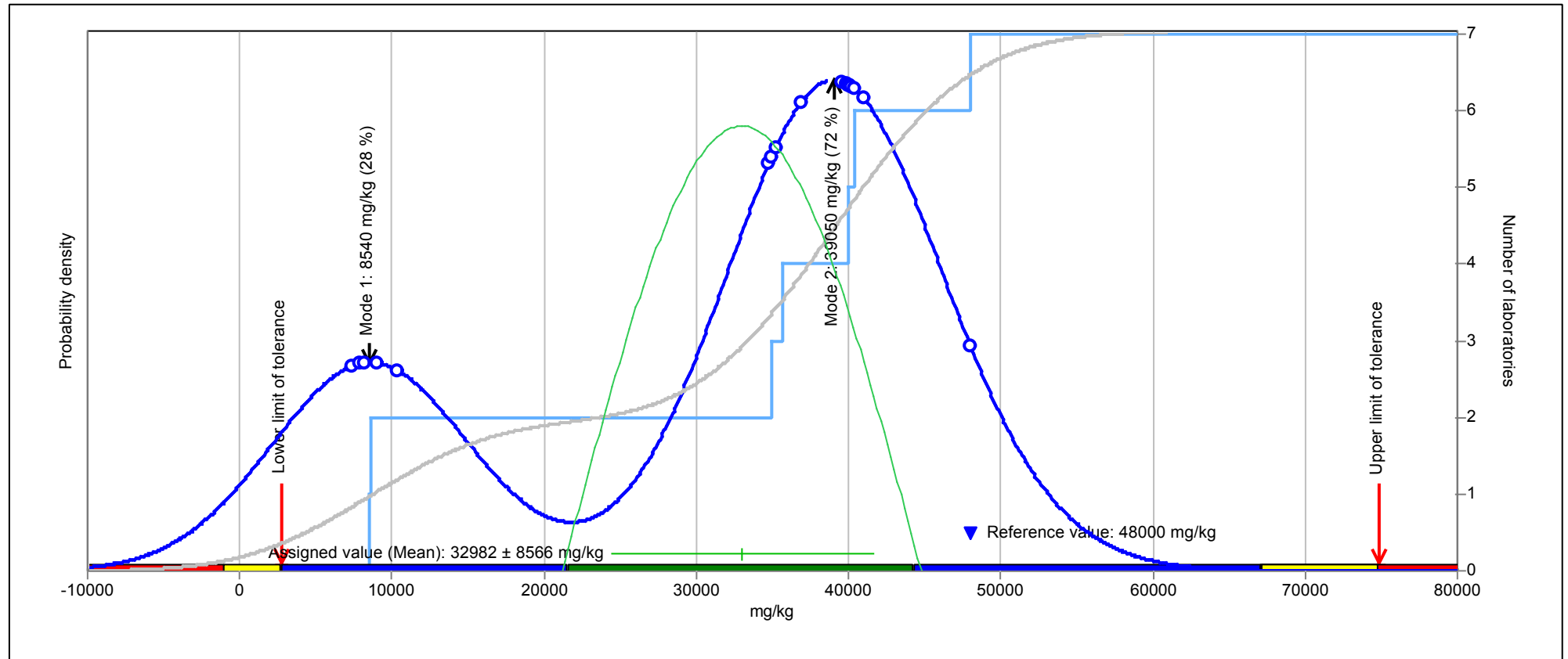


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: H

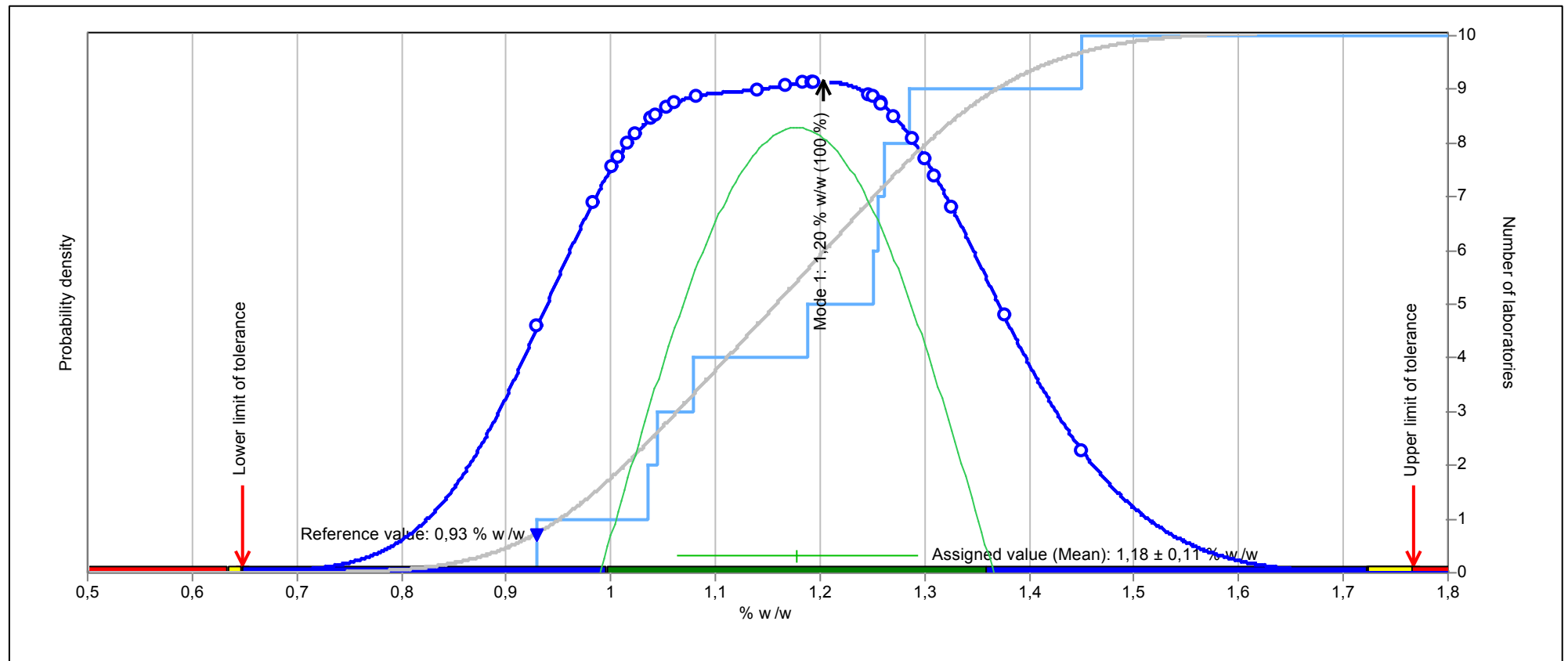


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: K

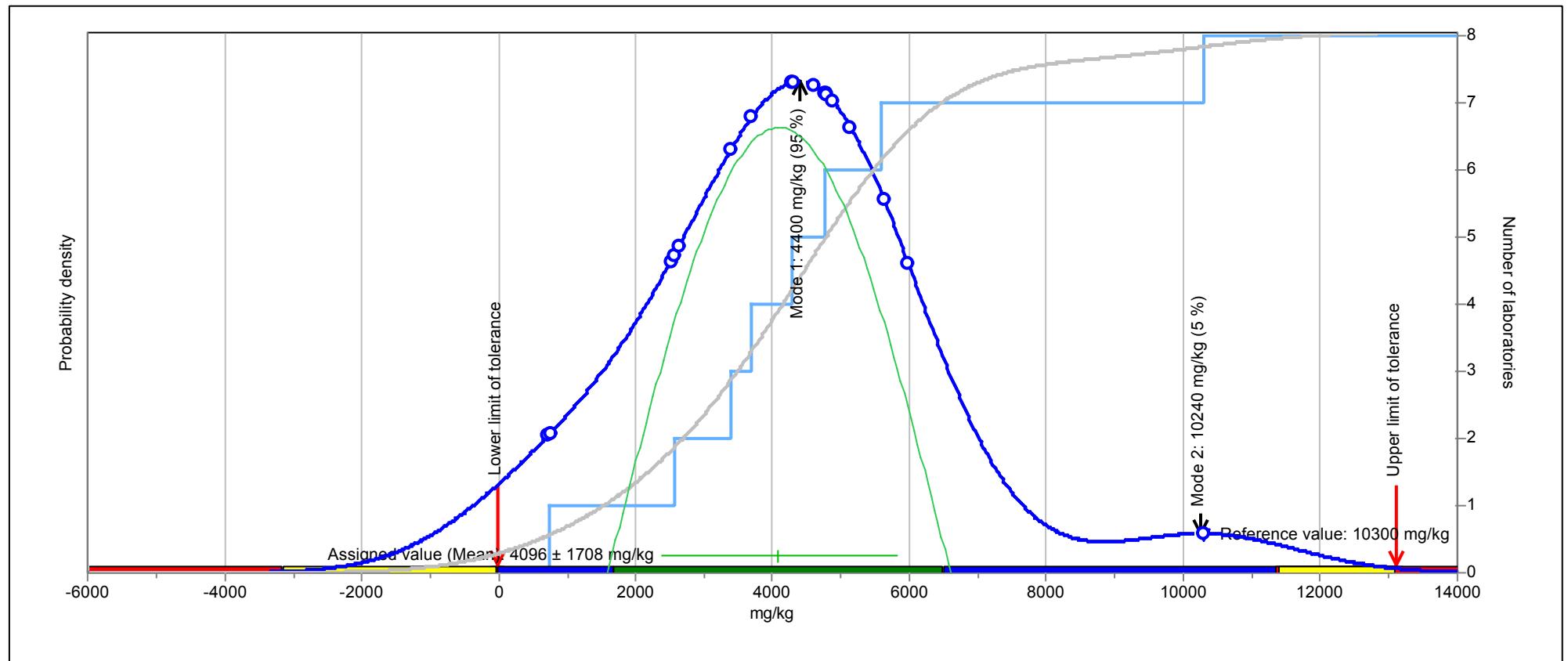


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: Mg

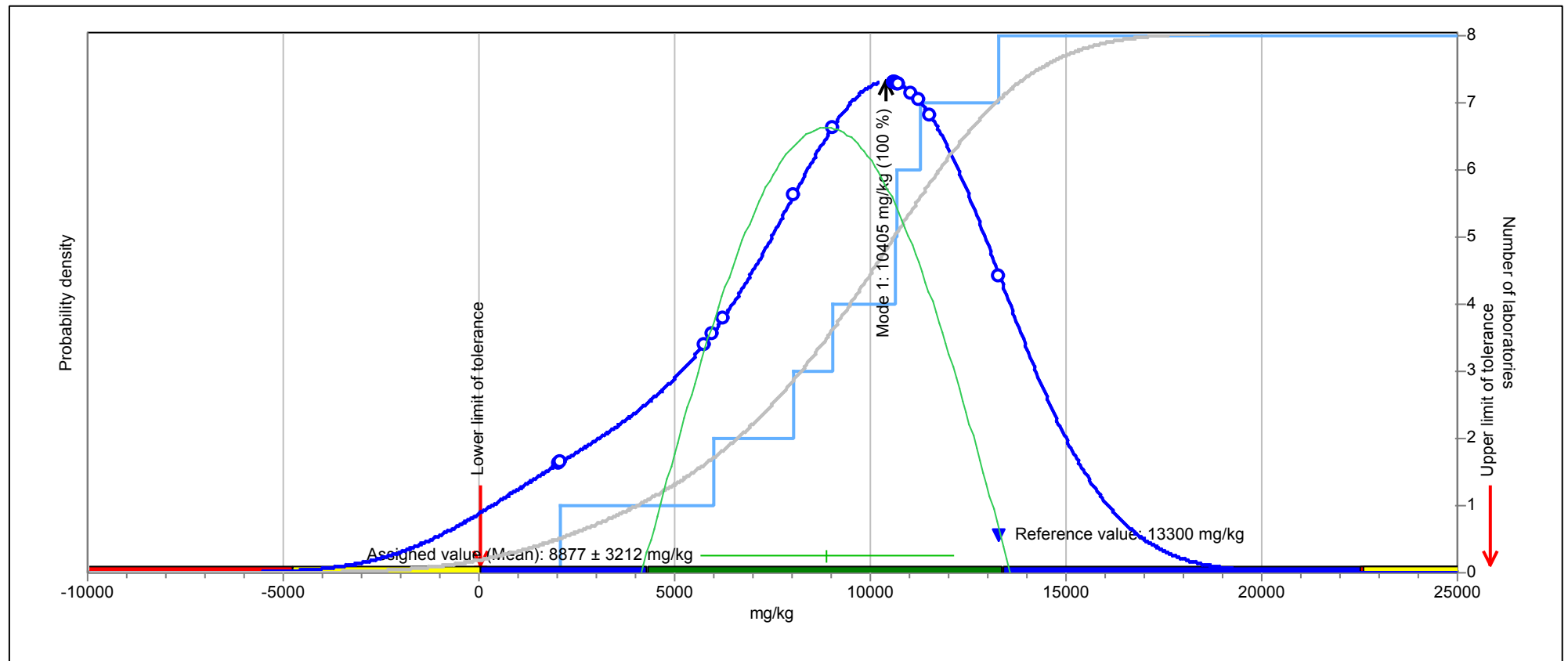


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: Mn

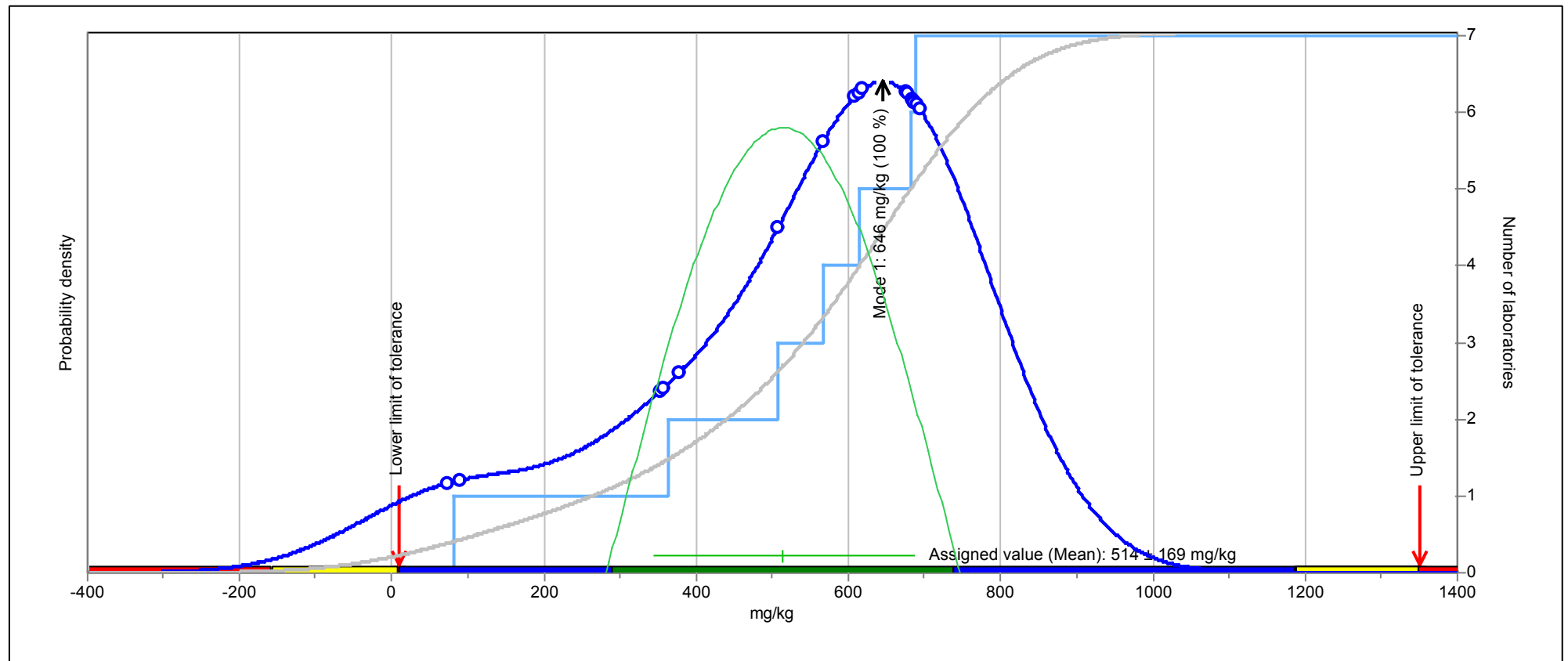


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: N

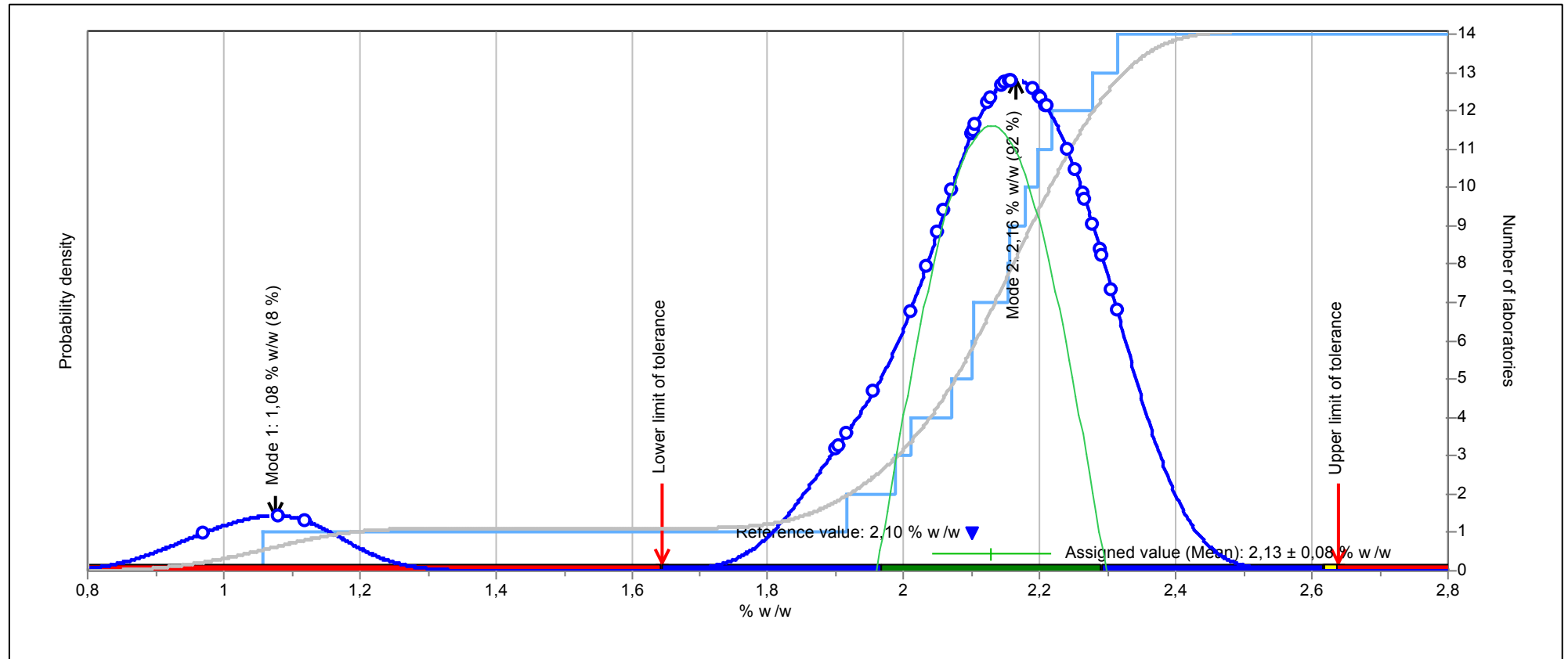


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: Na

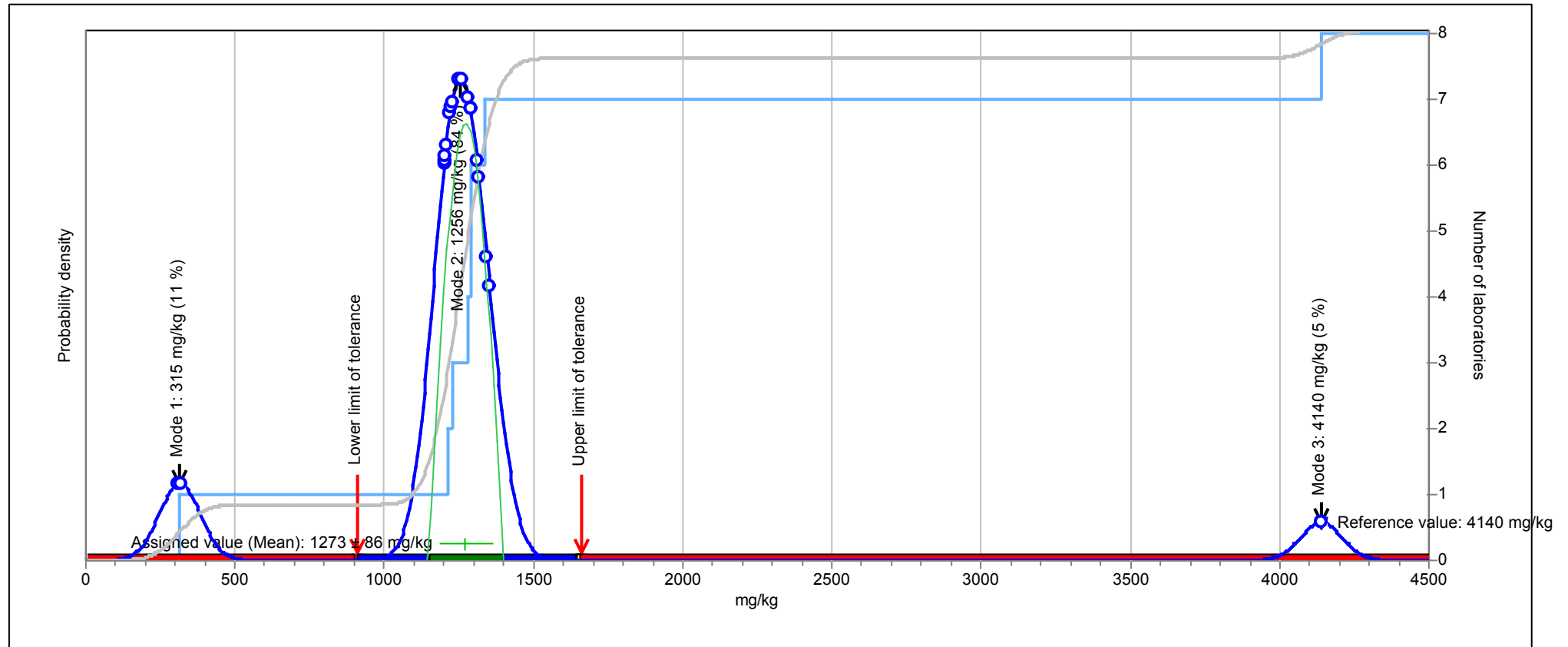


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: Ni

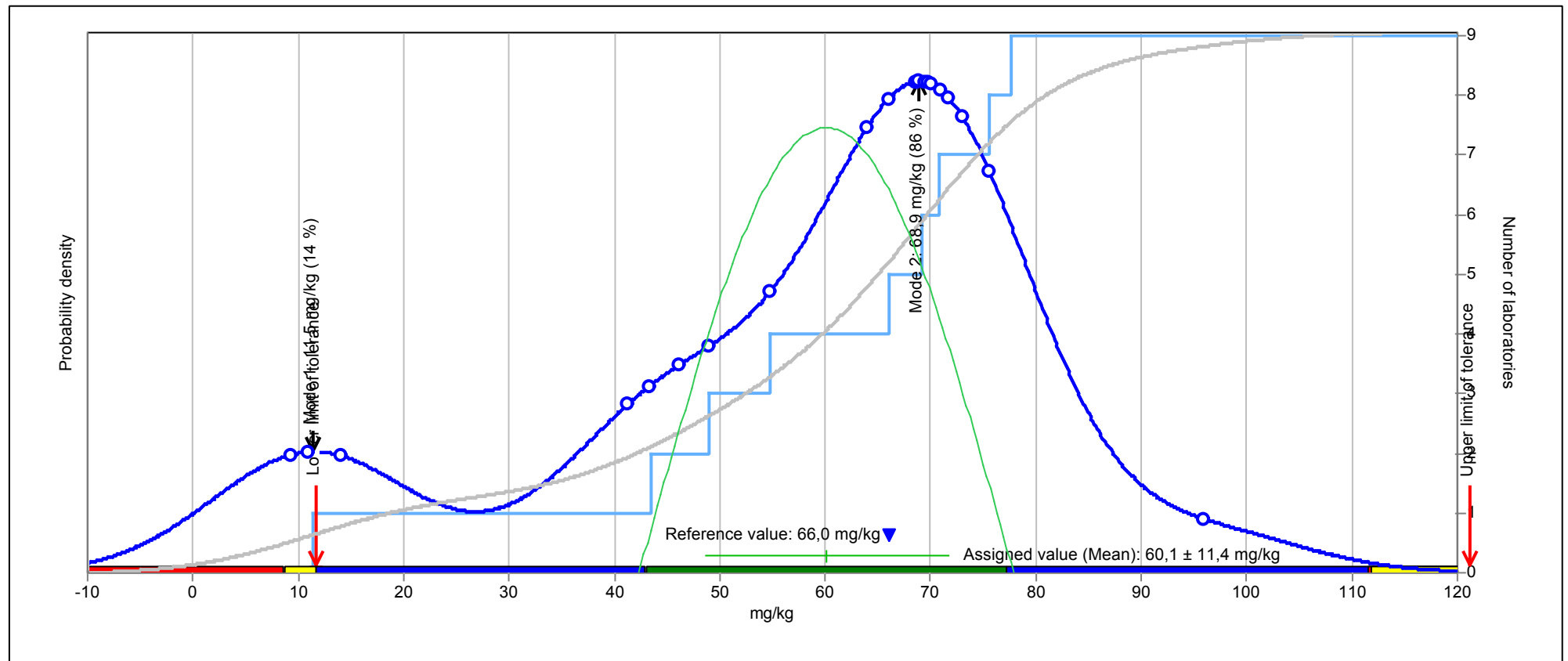


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: O

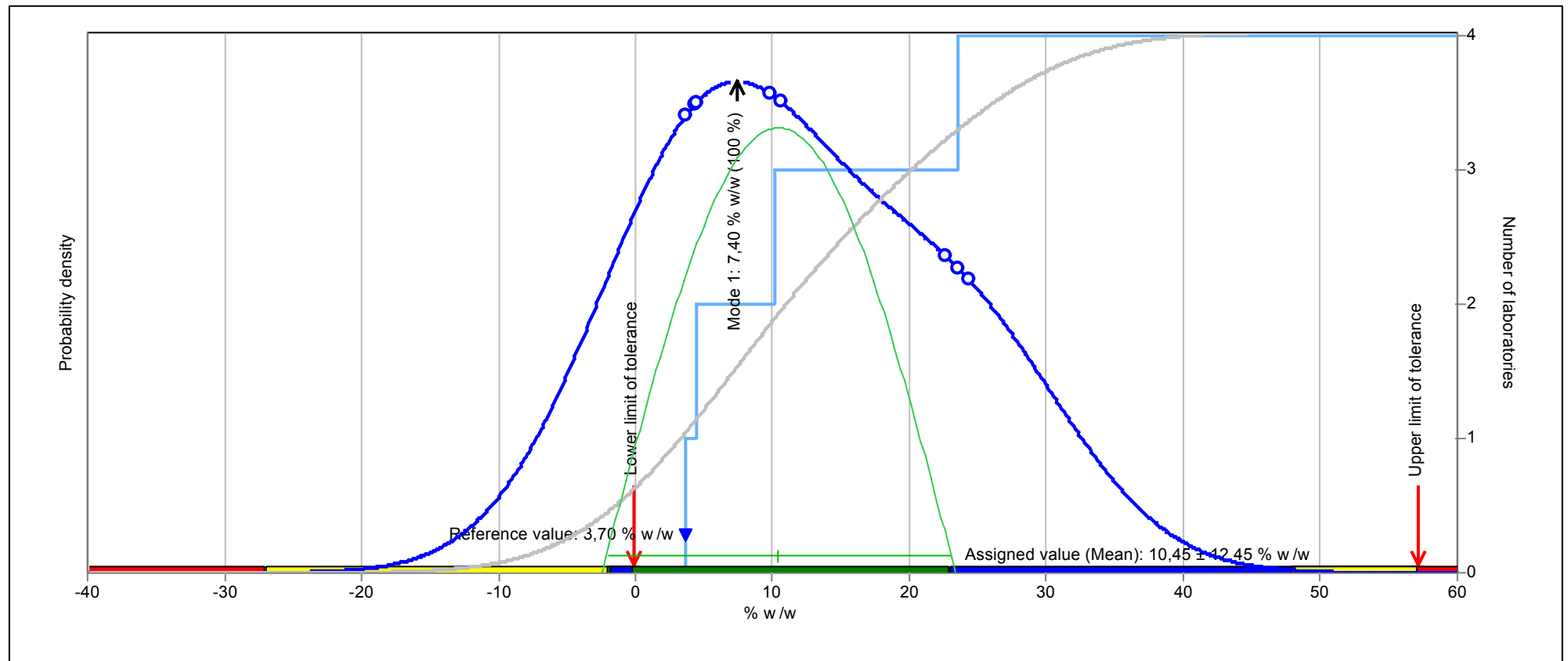


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: P

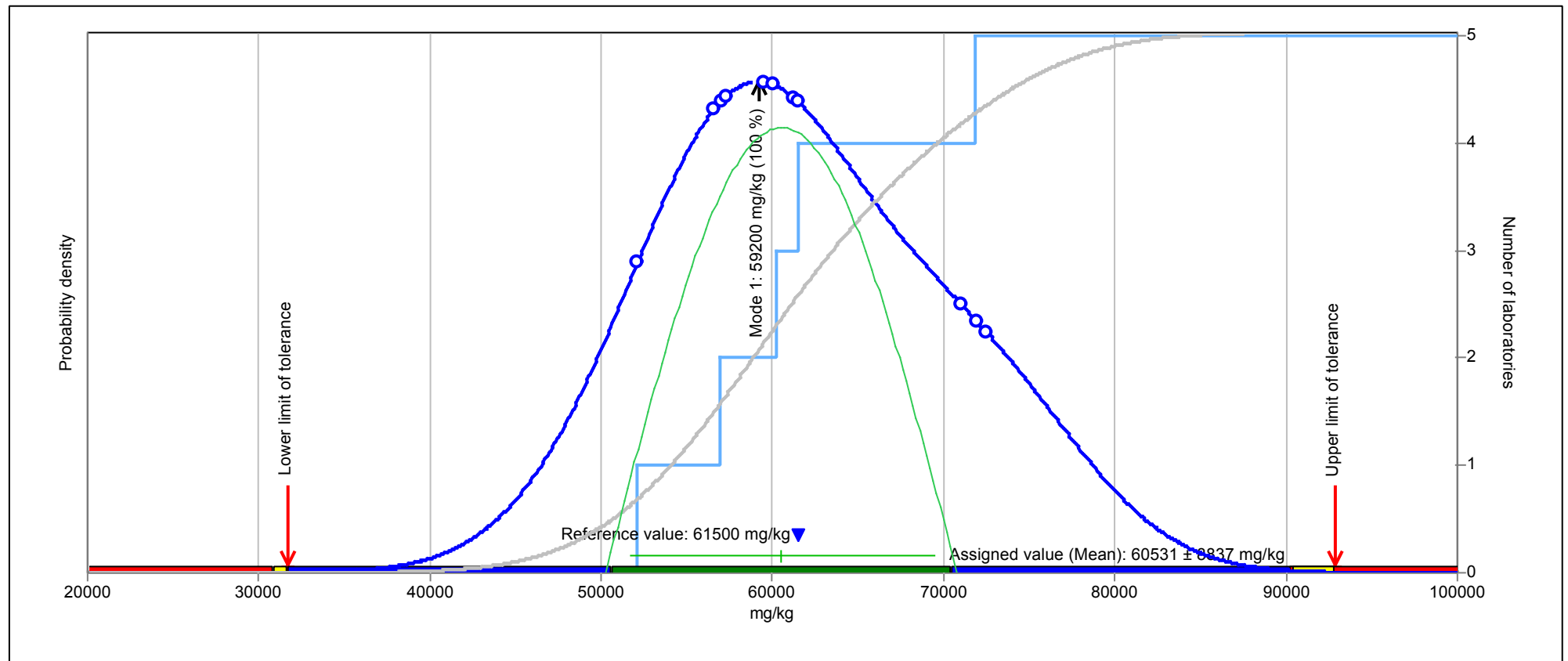


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Sum

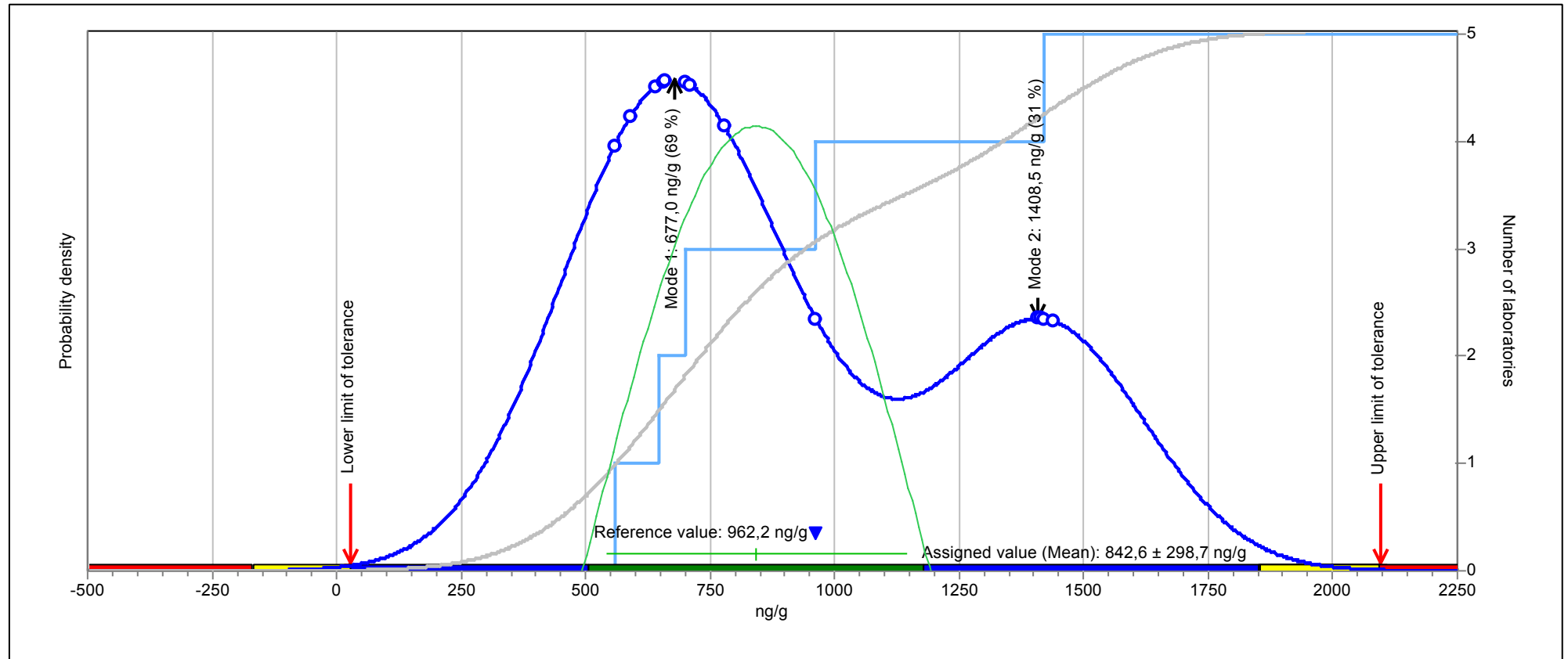


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Acenaphthene

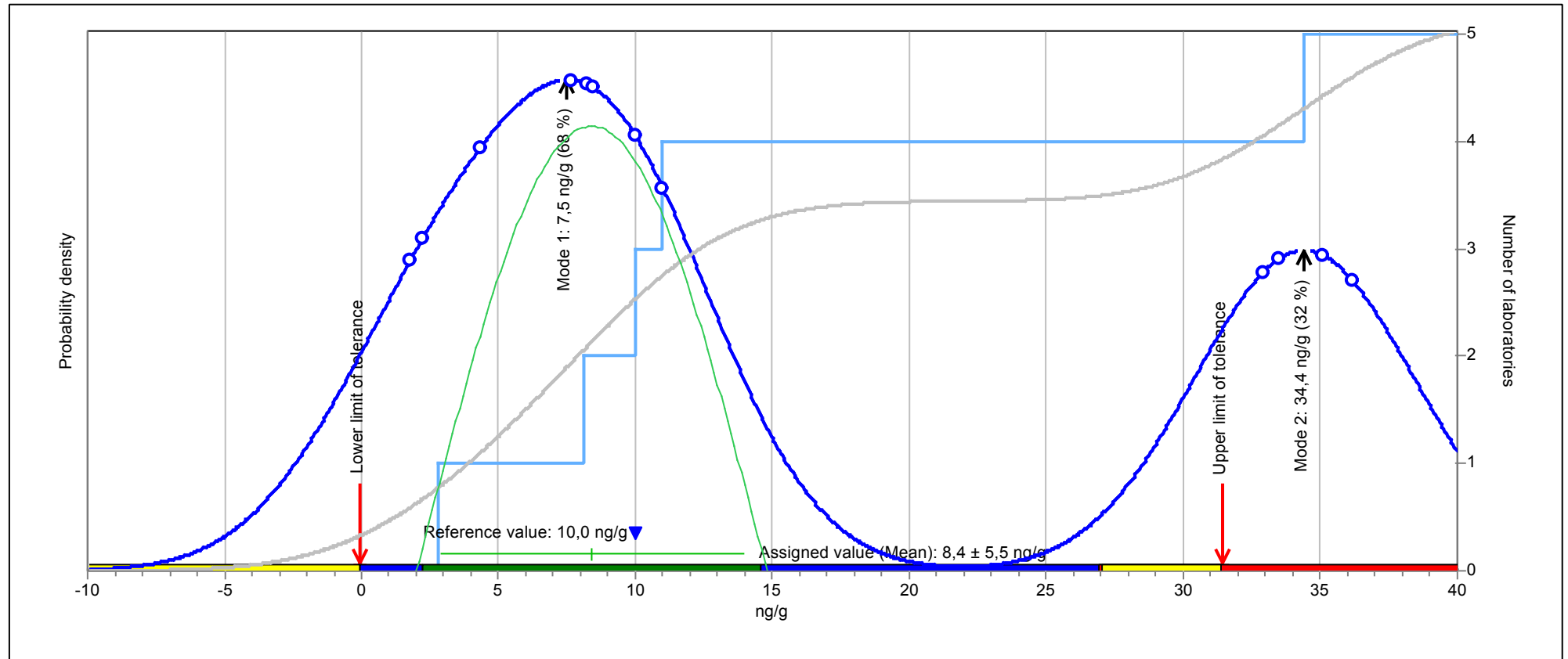


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Acenaphthylene

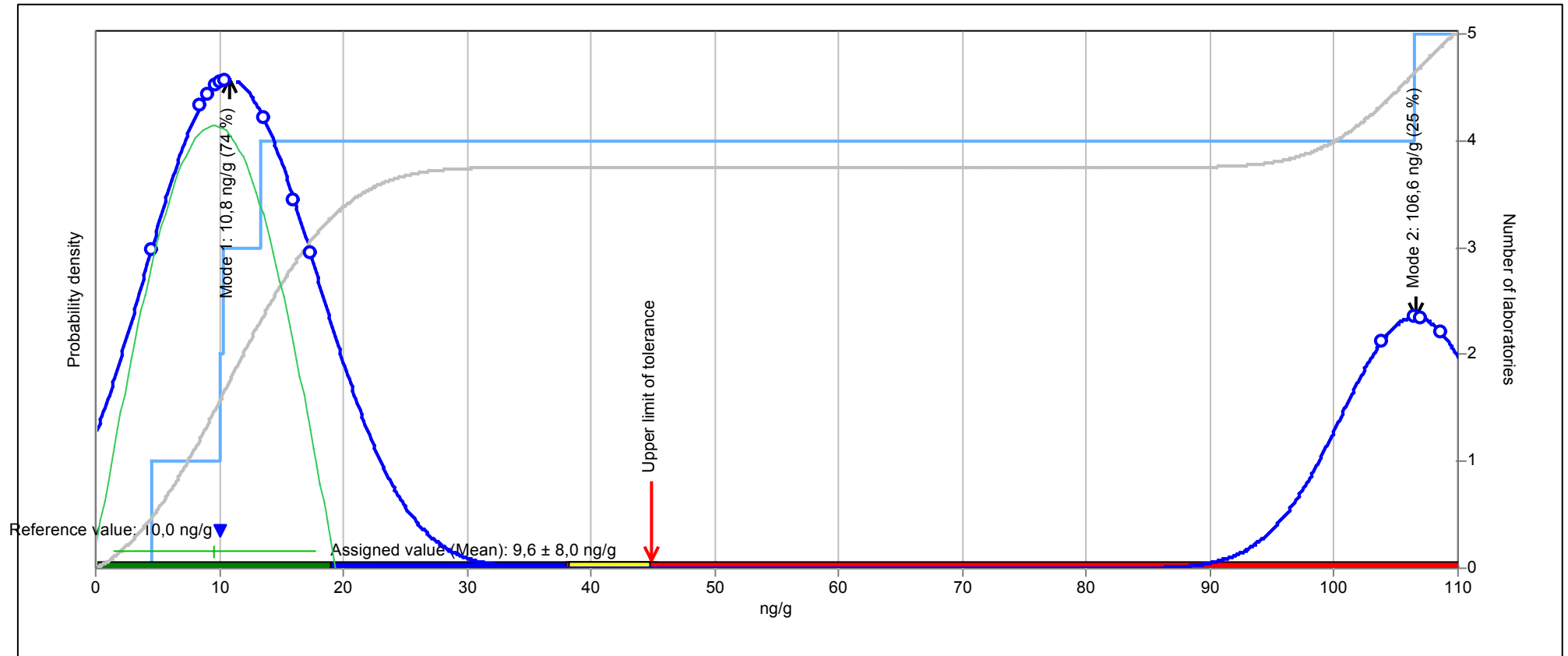


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Anthracene

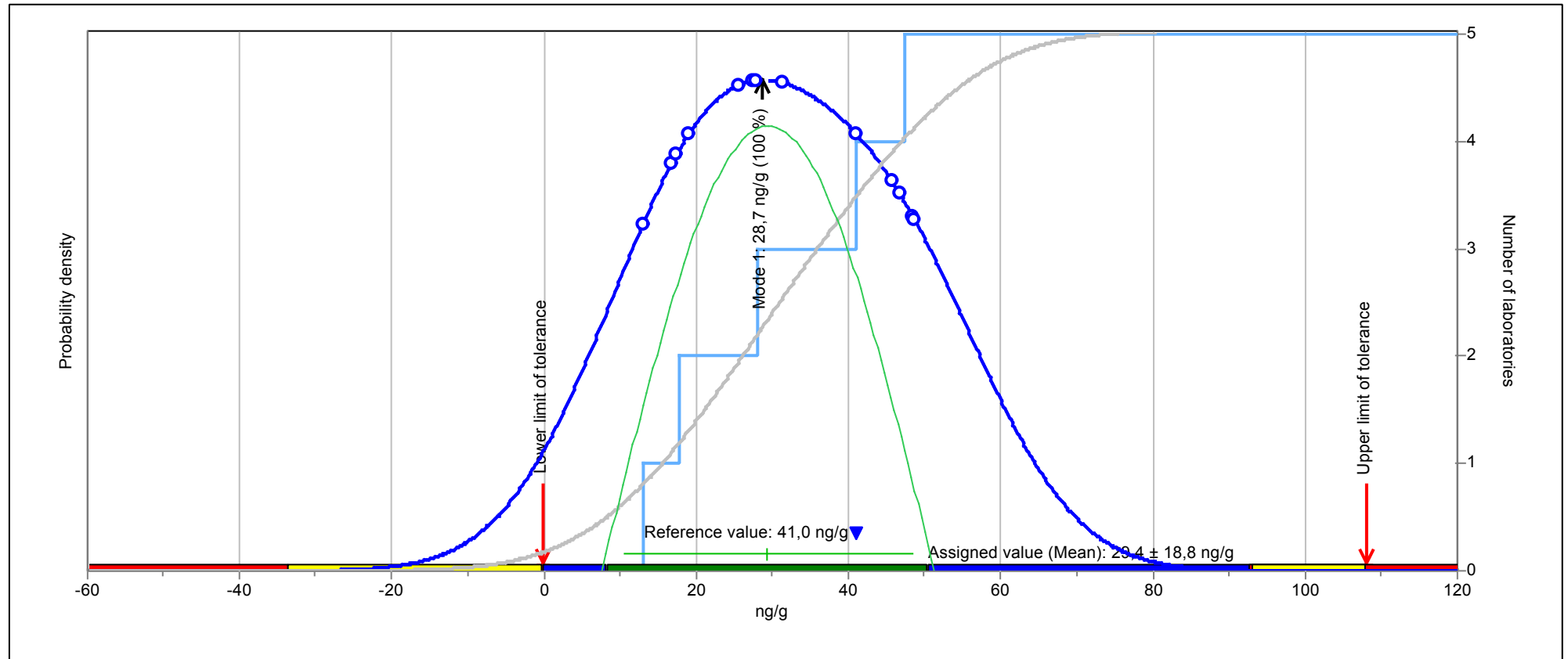


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Benzo[a]anthracene

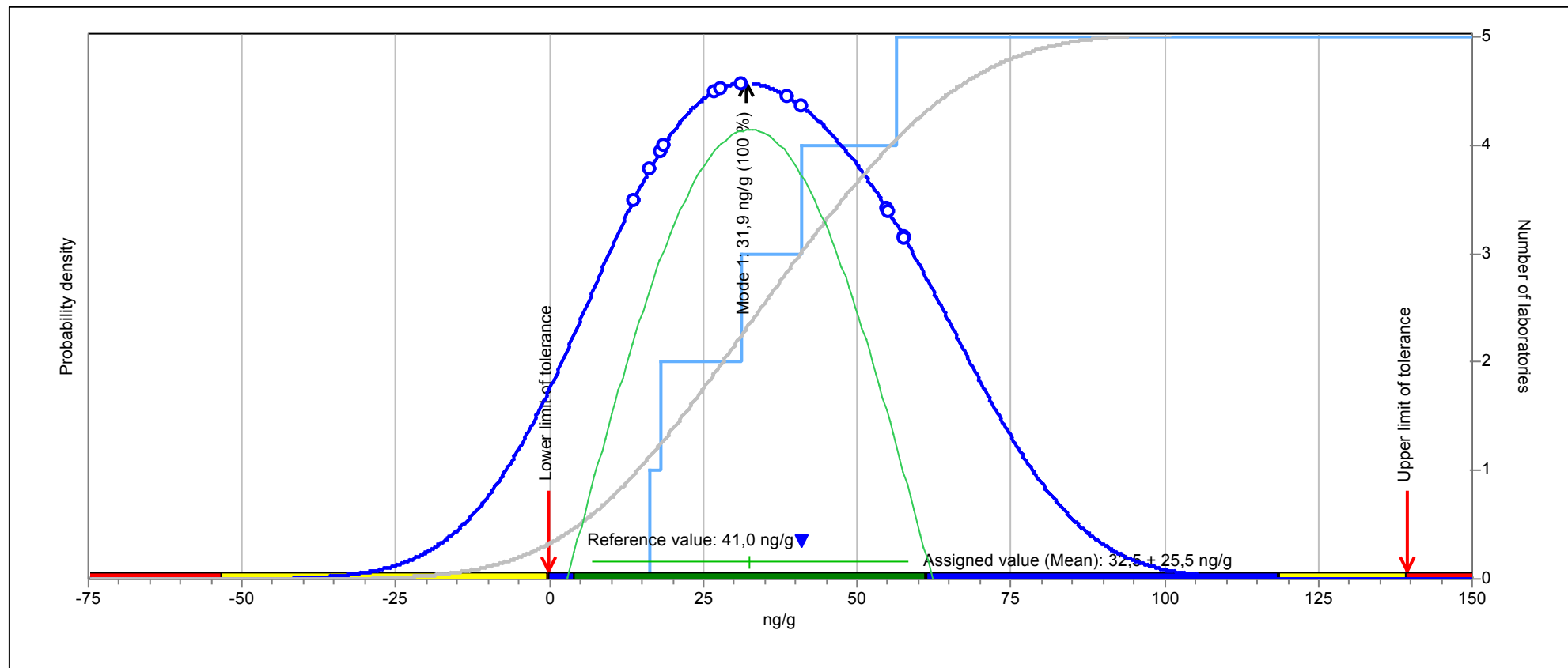


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Benzo[a]pyrene

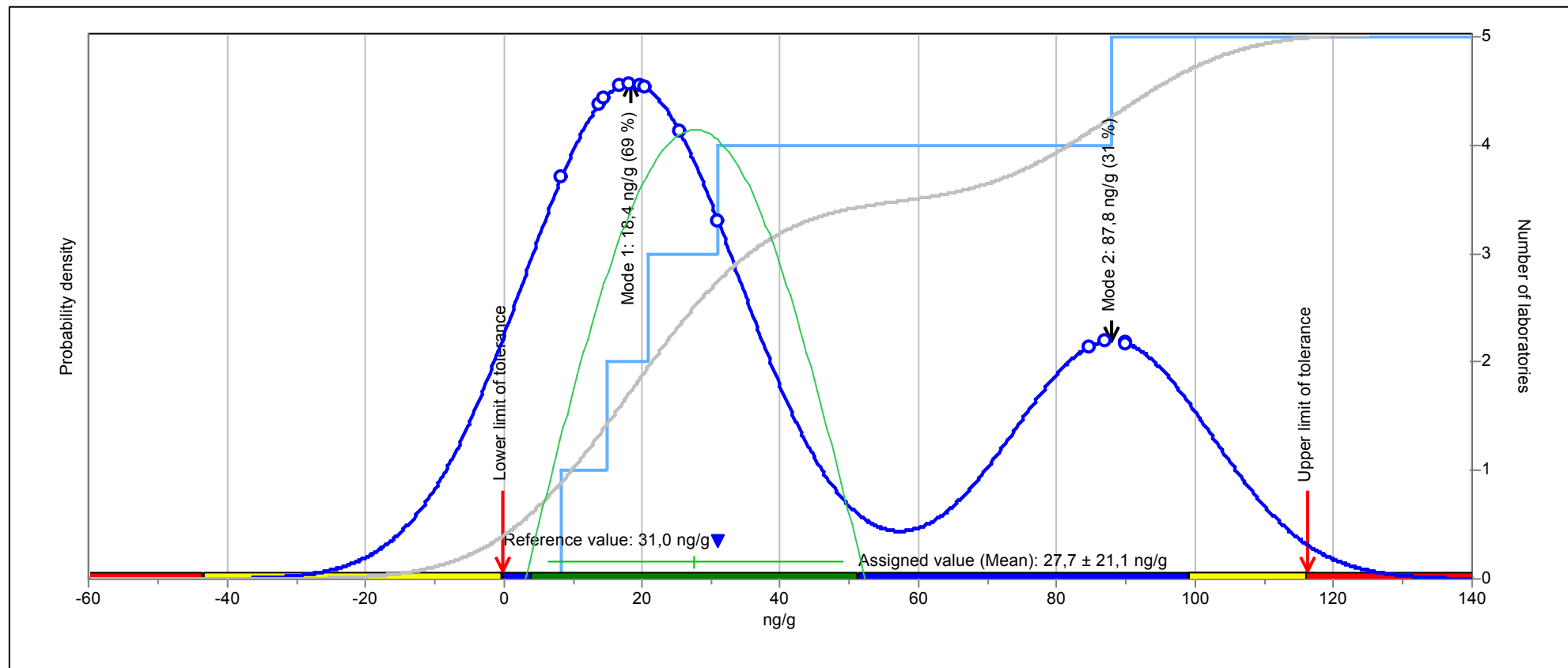


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Benzo[b]fluoranthene

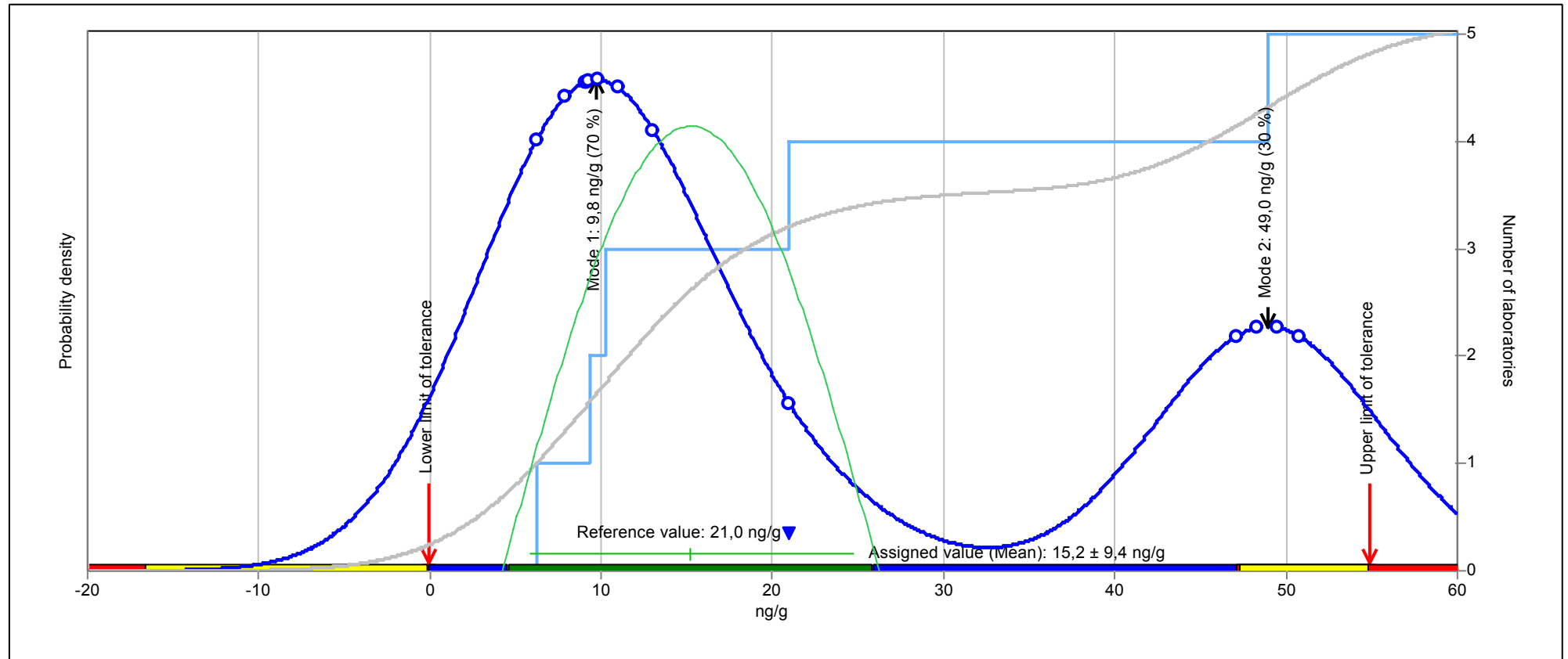


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Benzo[k]fluoranthene

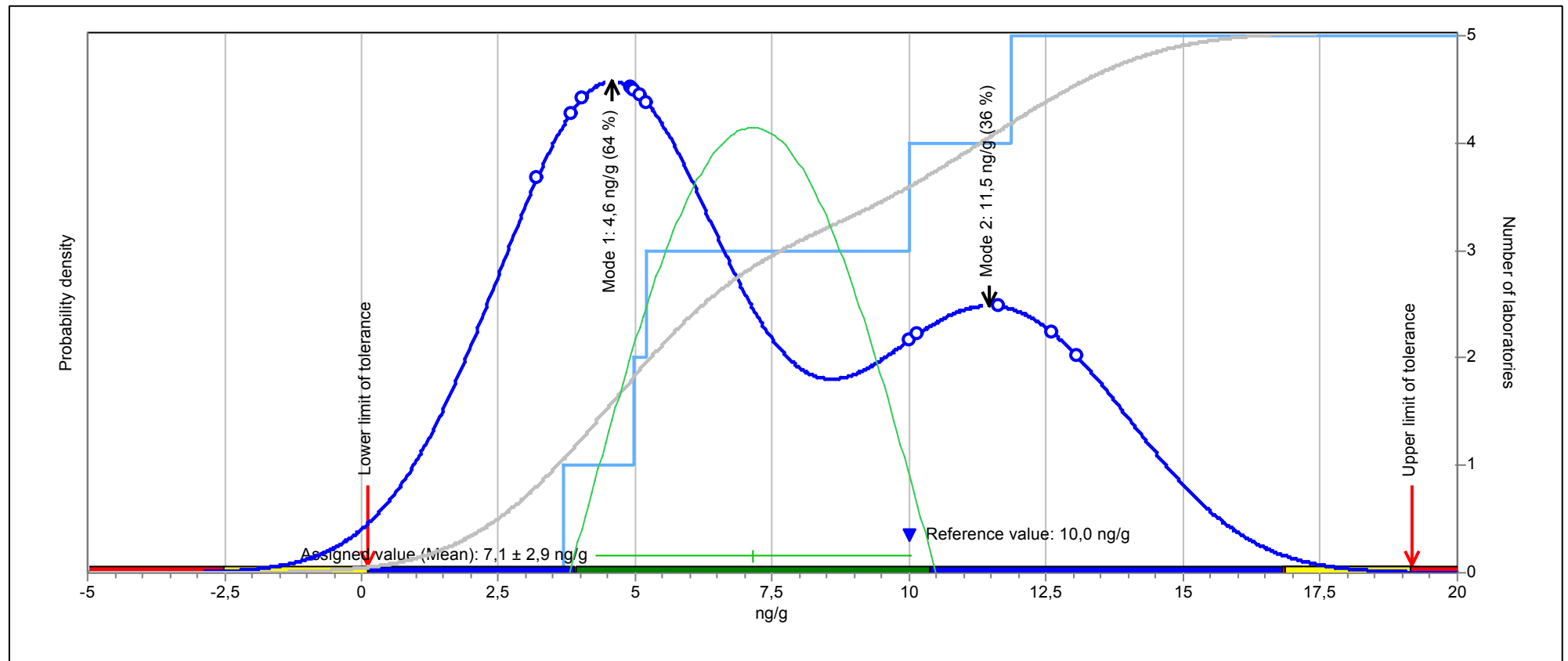


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Benzo[ghi]perylene

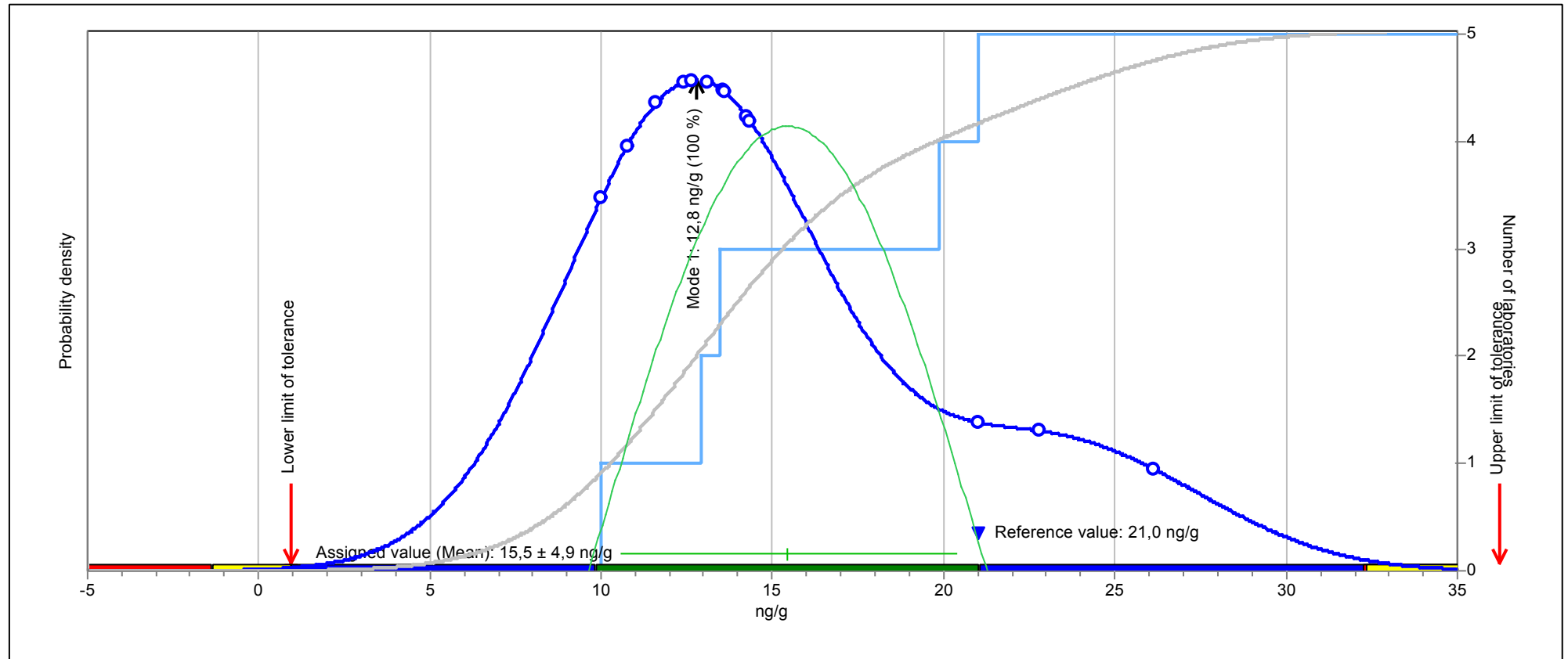


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Chrysene

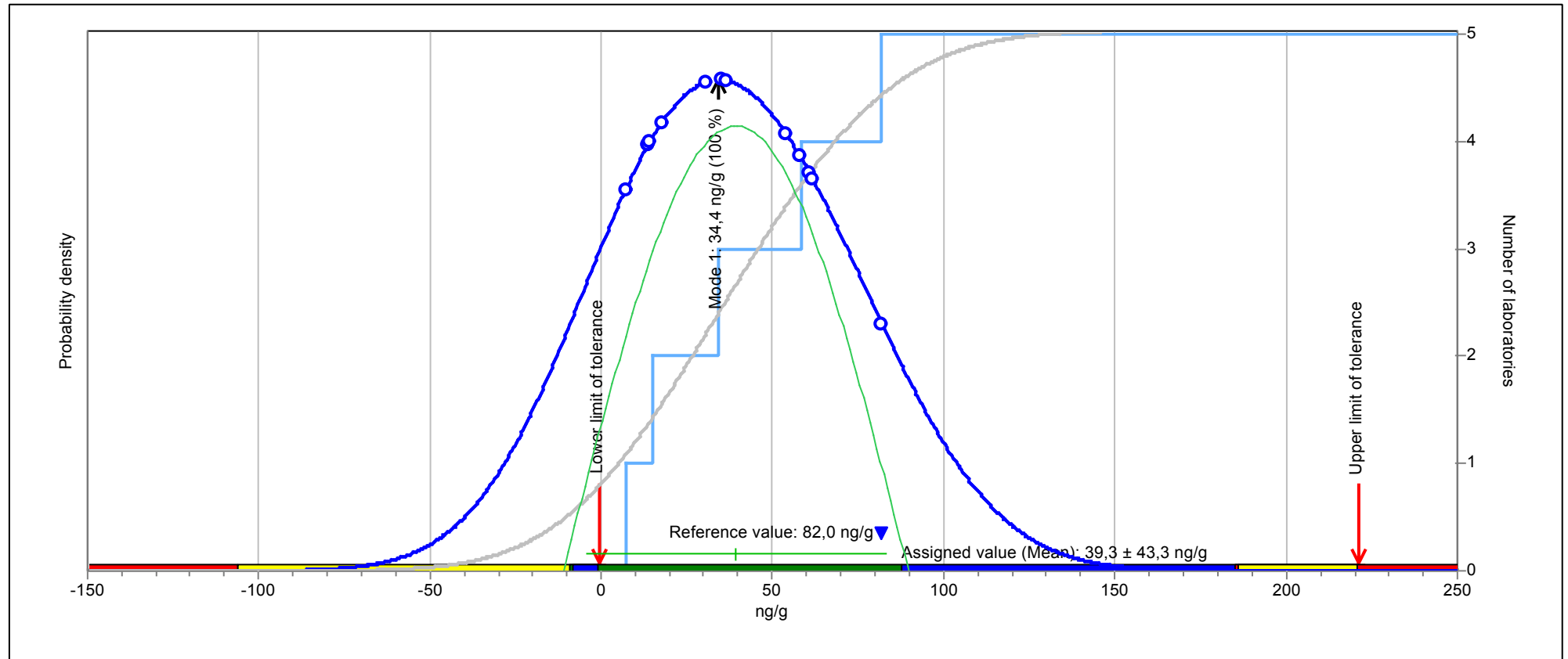


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Dibenzo[a,h]anthracene

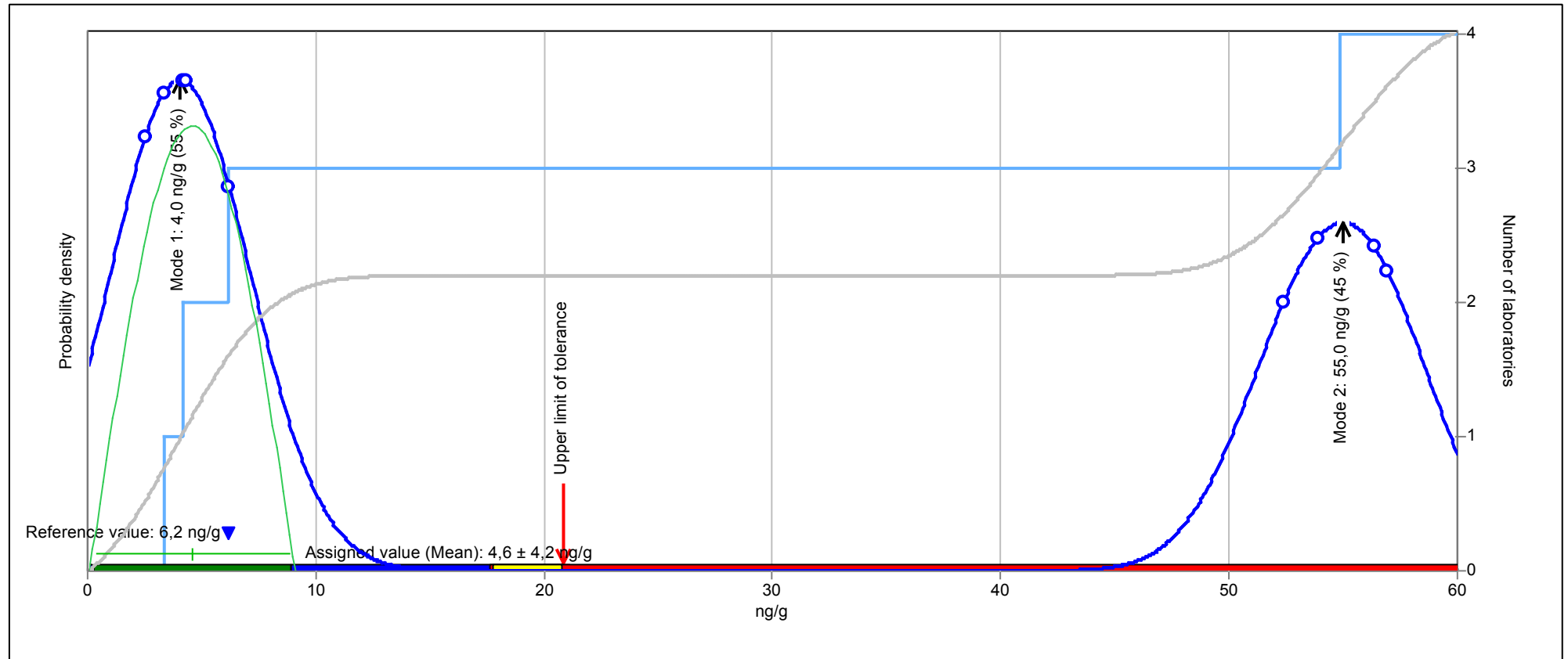


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Fluoranthene

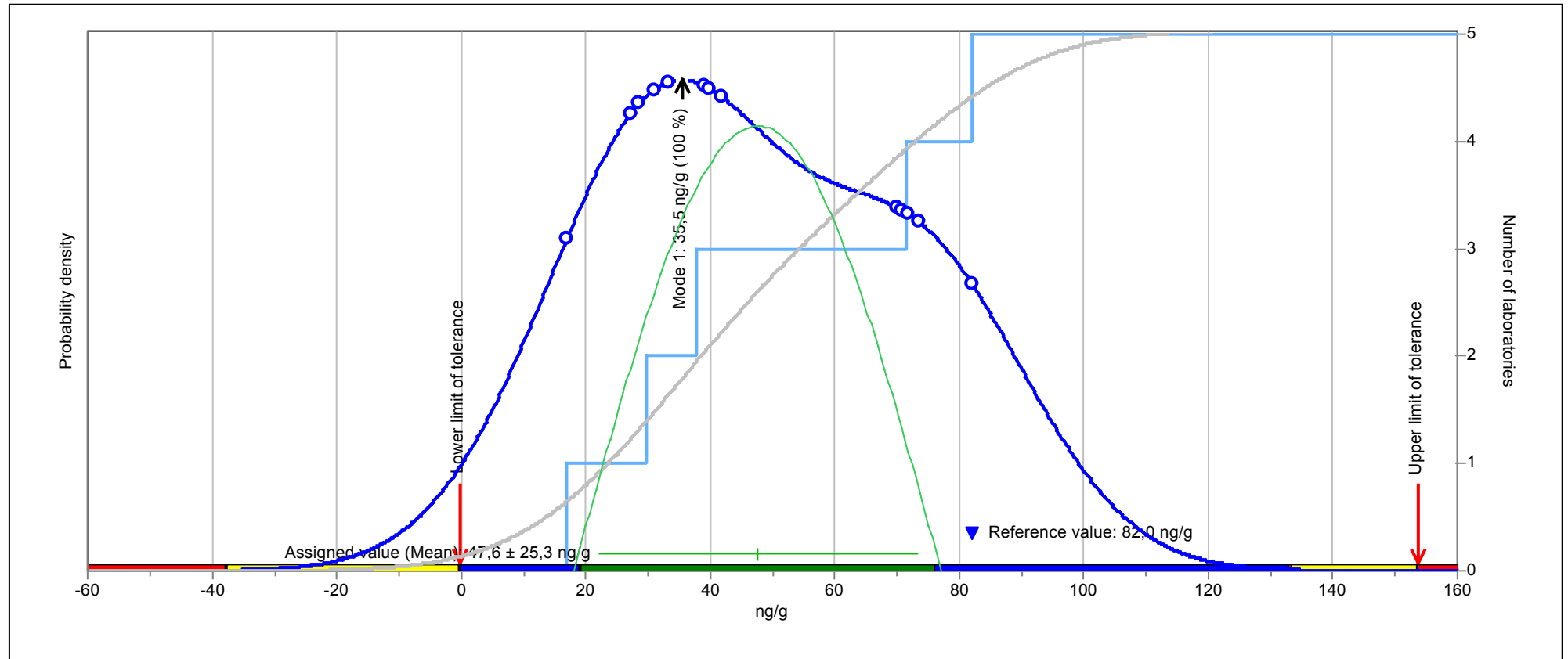


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Fluorene

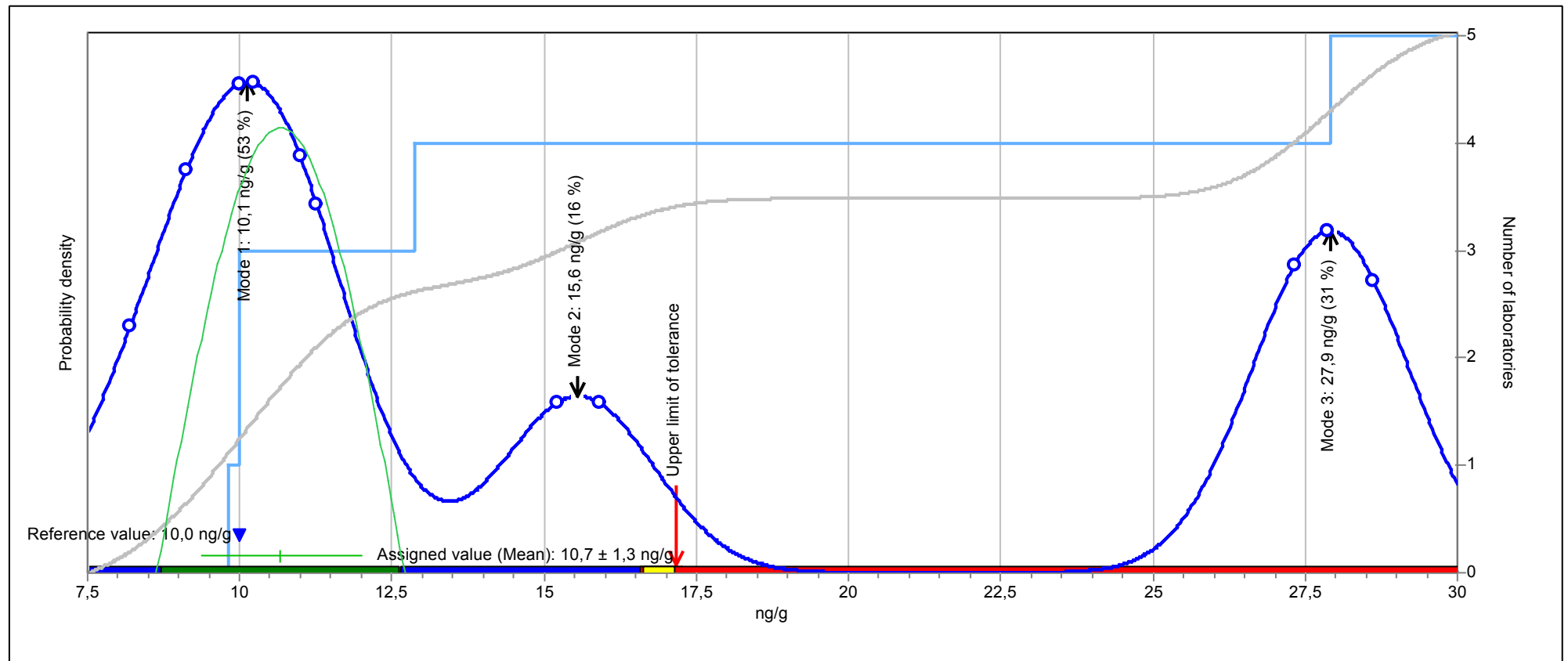


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Indeno[1,2,3-cd]pyrene

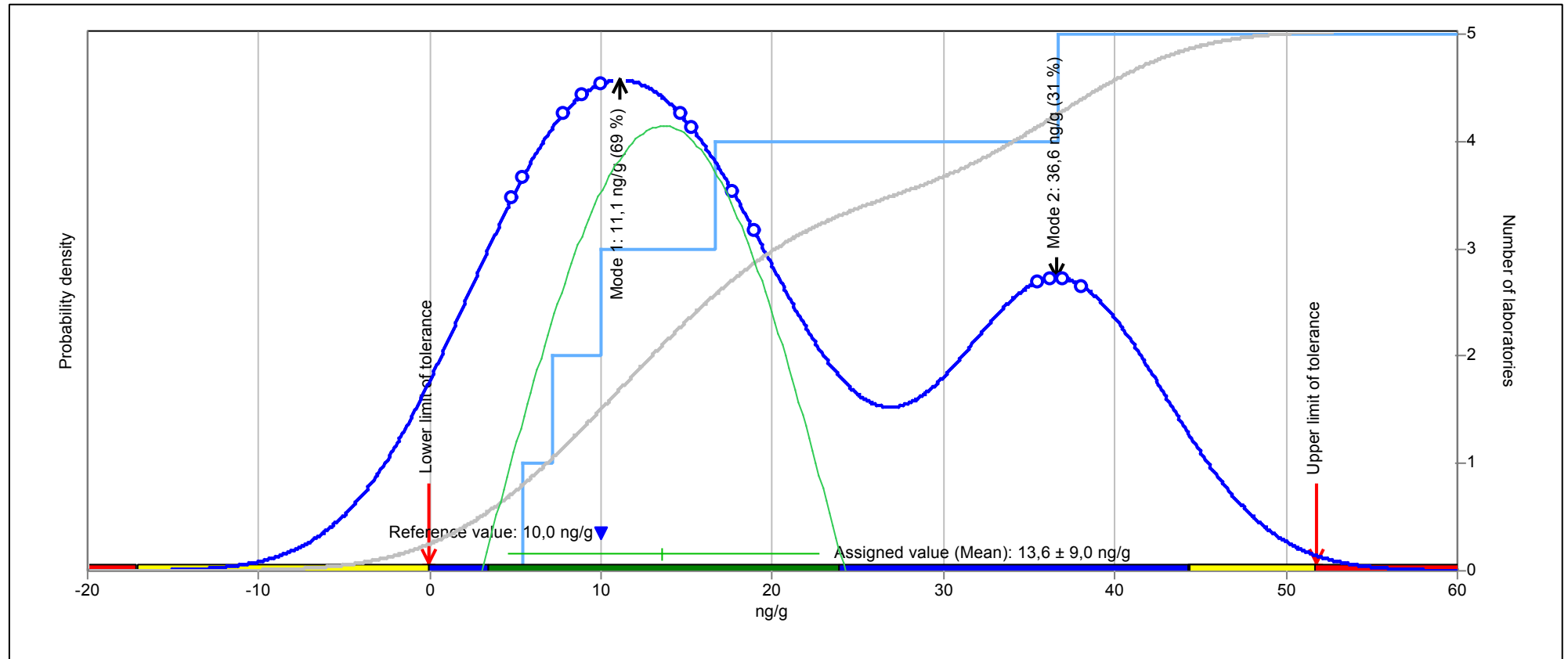


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Naphthalene

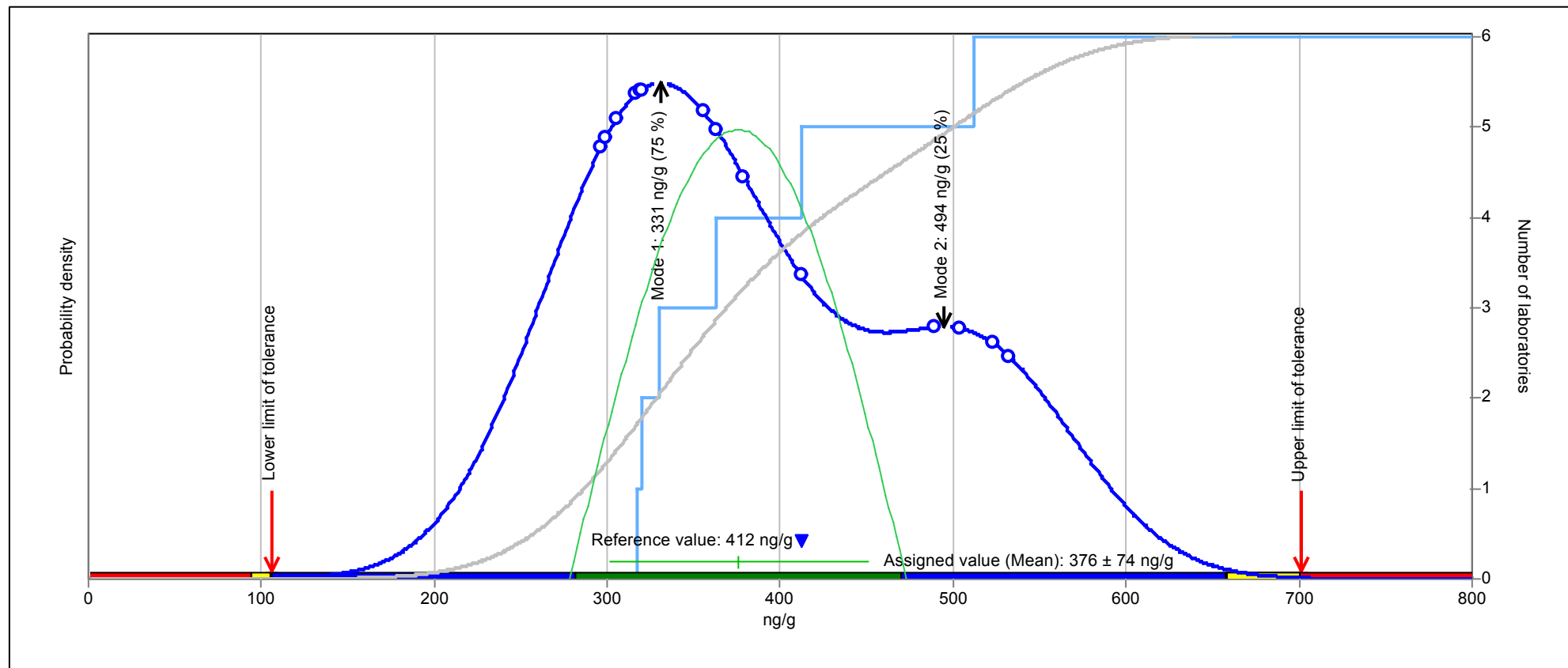


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Phenanthrene

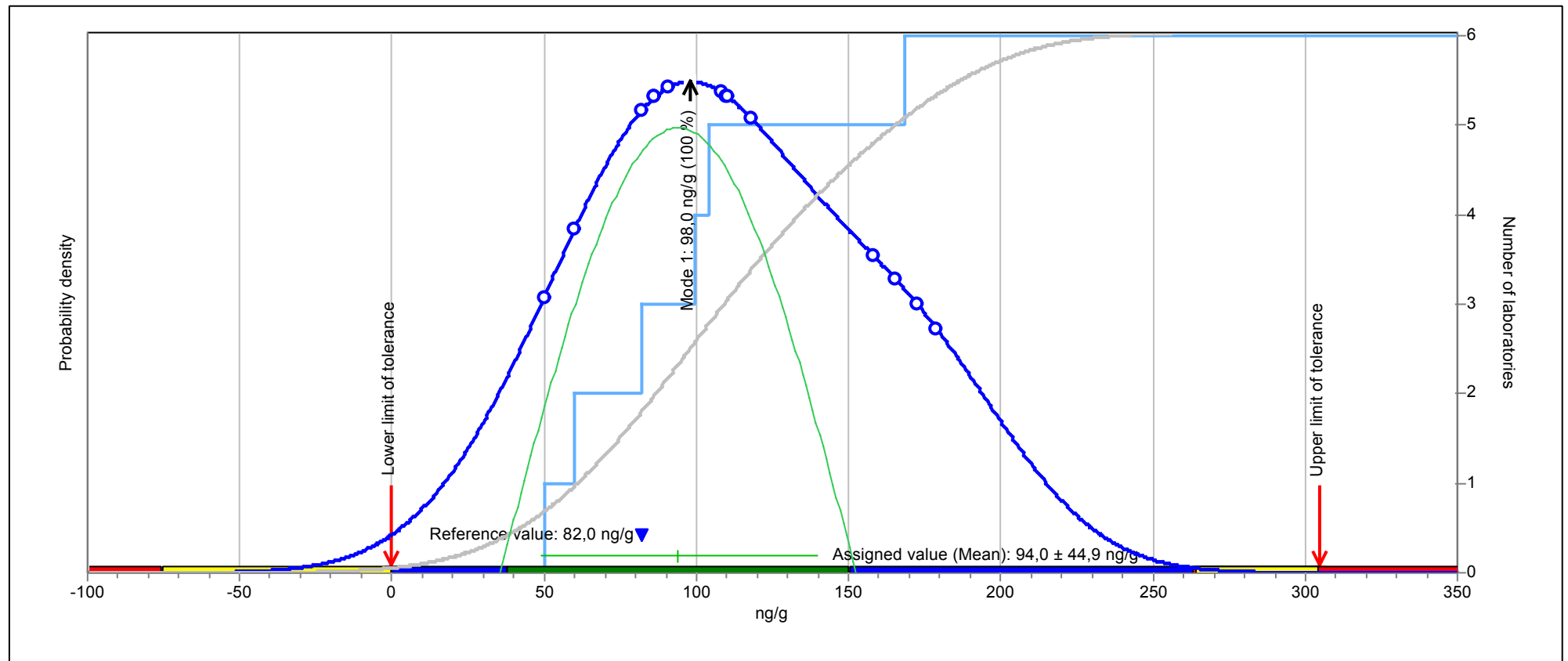


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: PAH_Pyrene

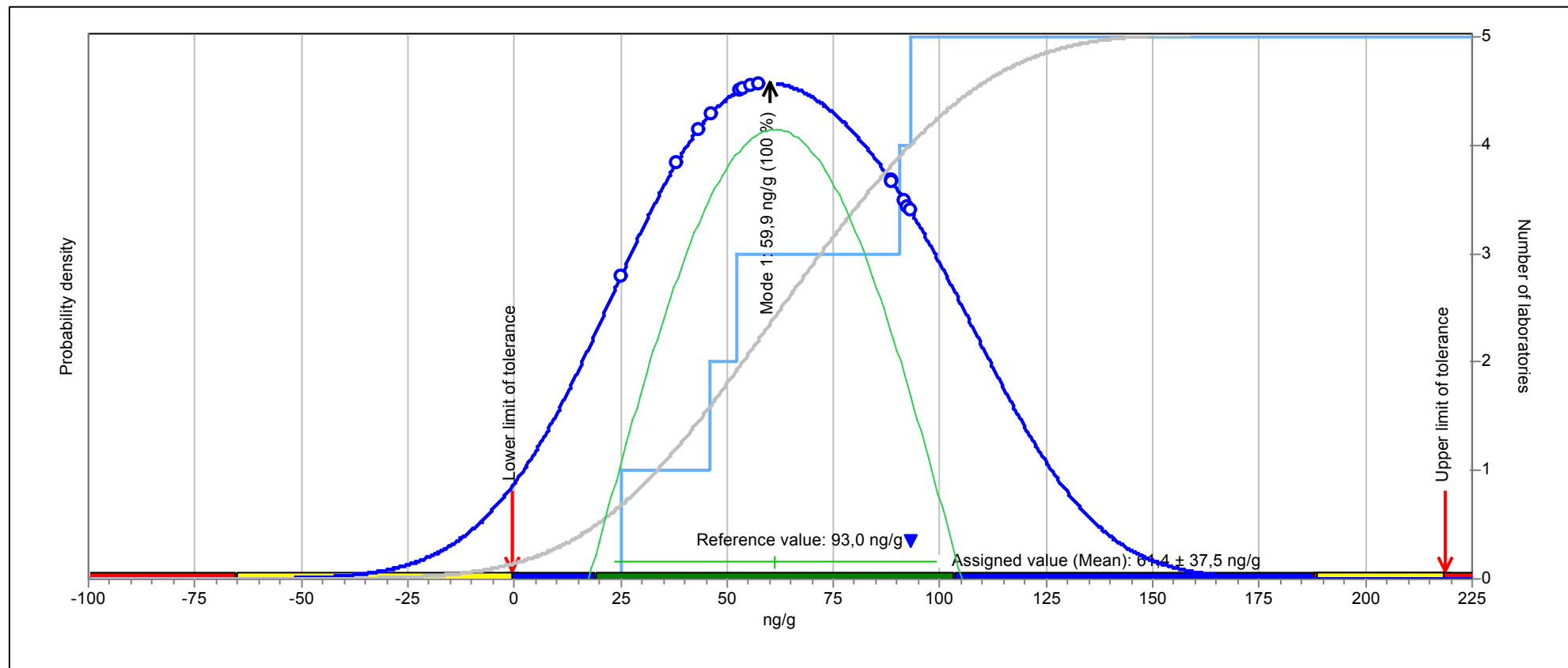


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: Pb

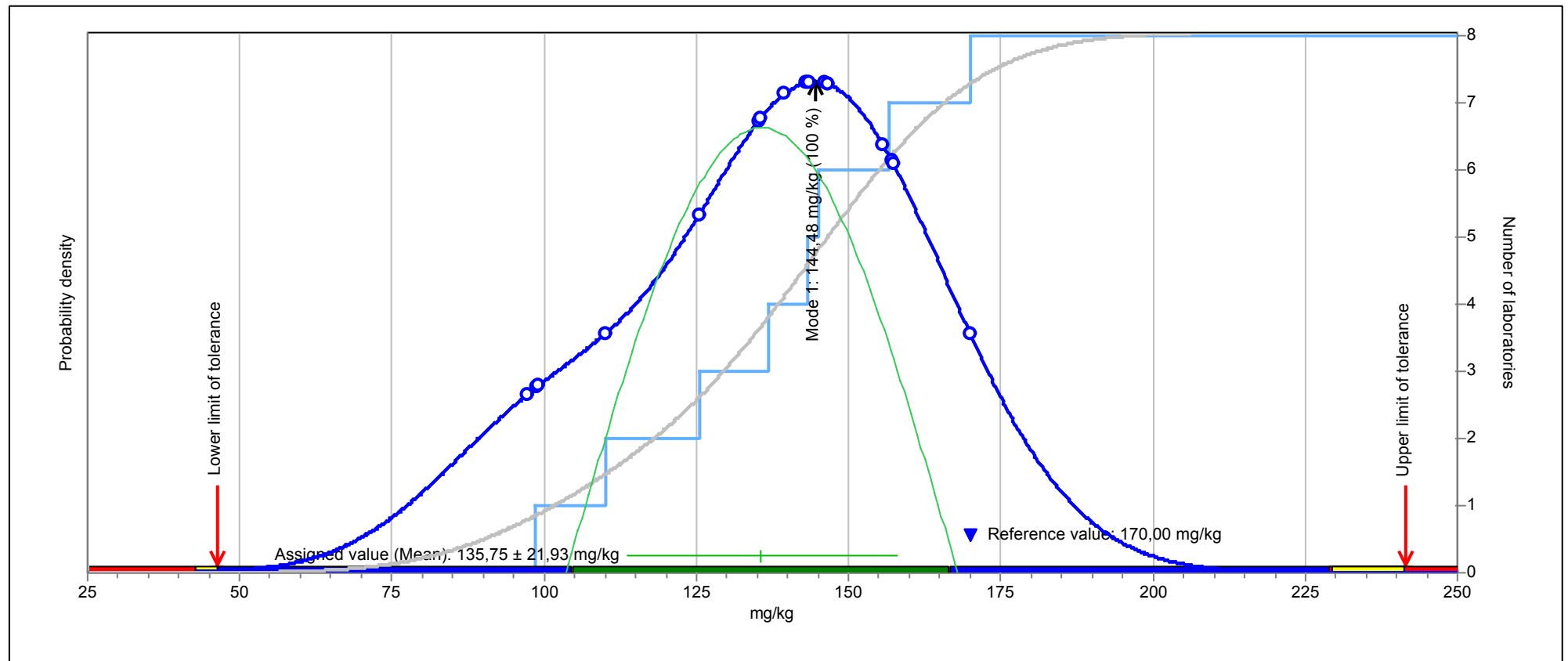


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: pH

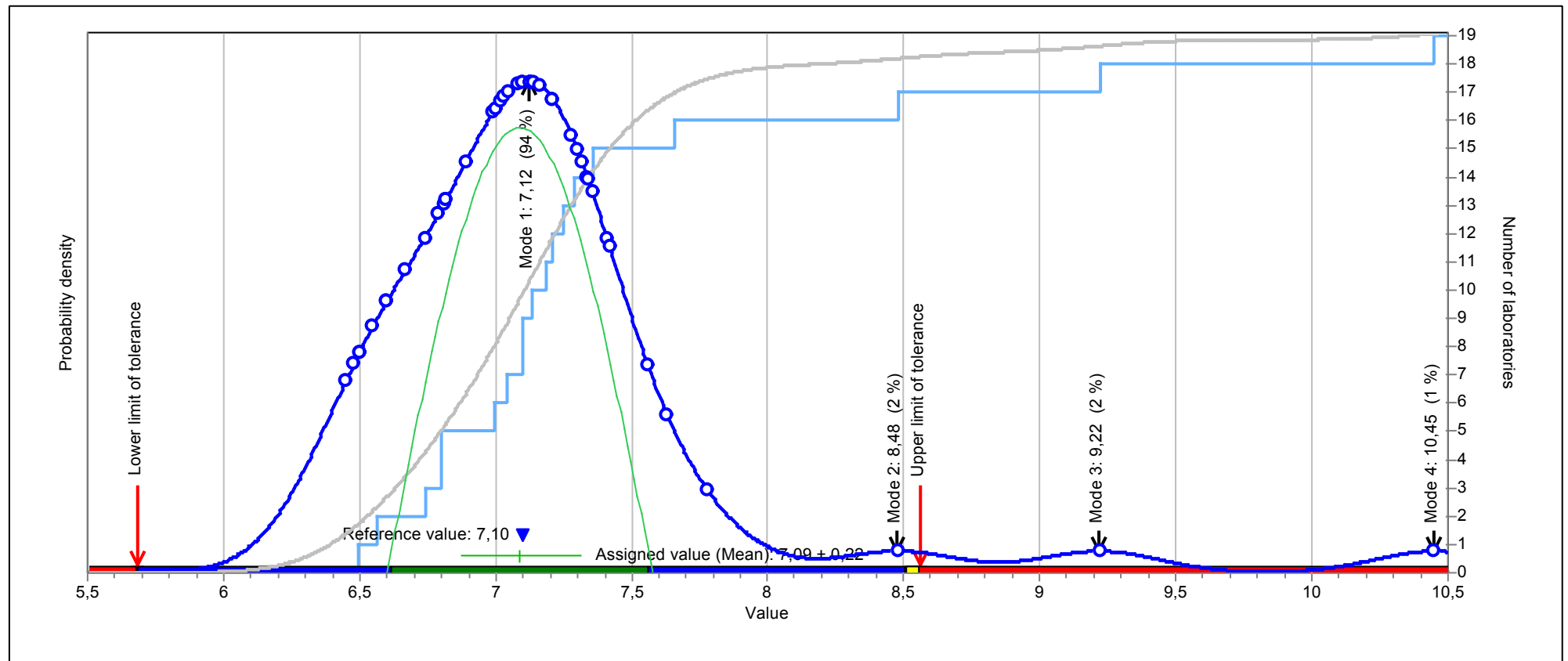


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: S

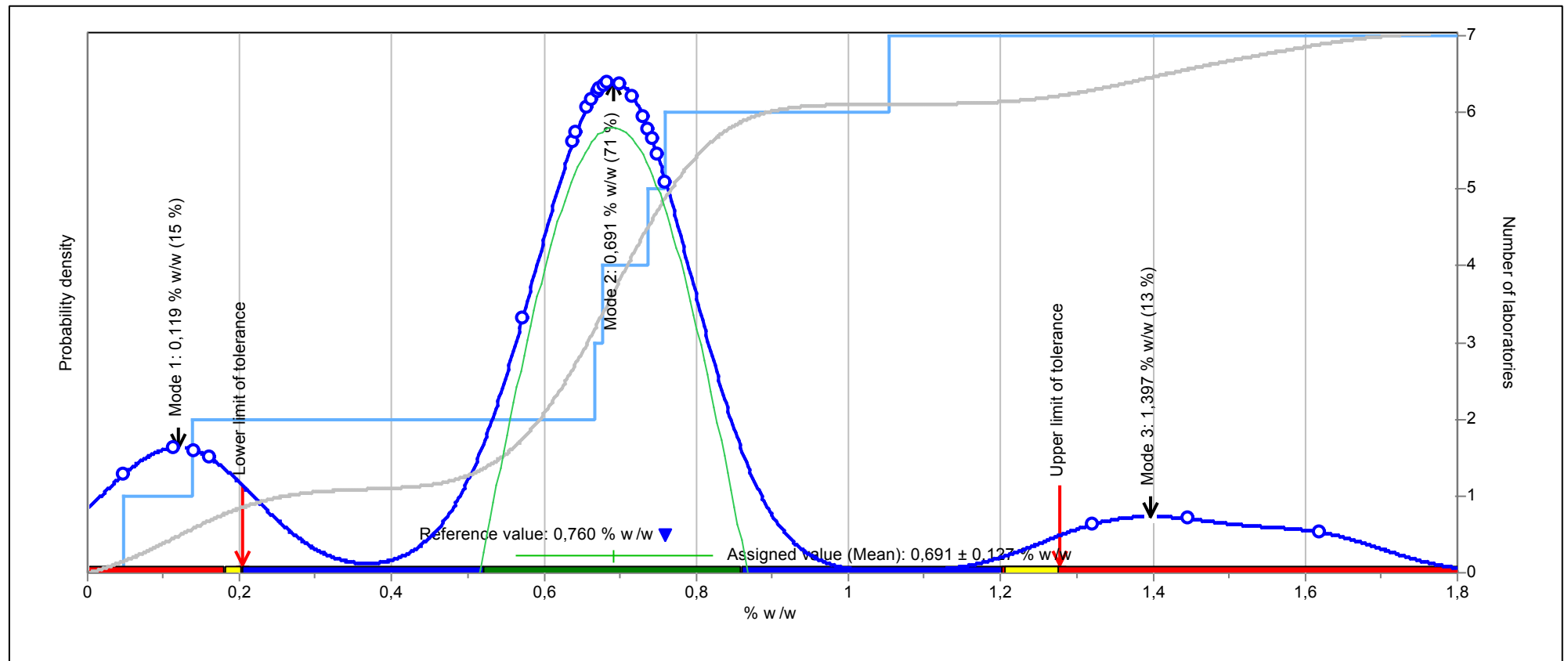


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: S_ICP-OES

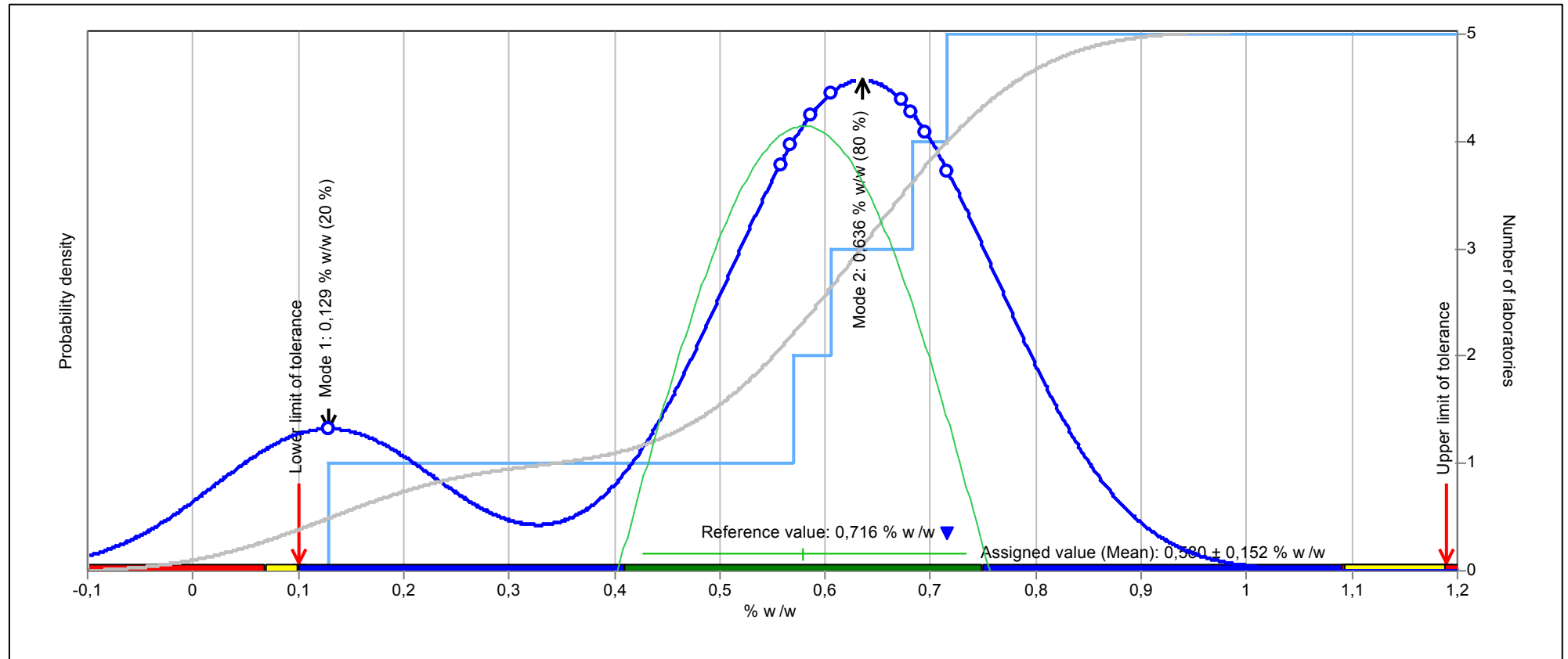


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3
Parameter: Specific_surface_area

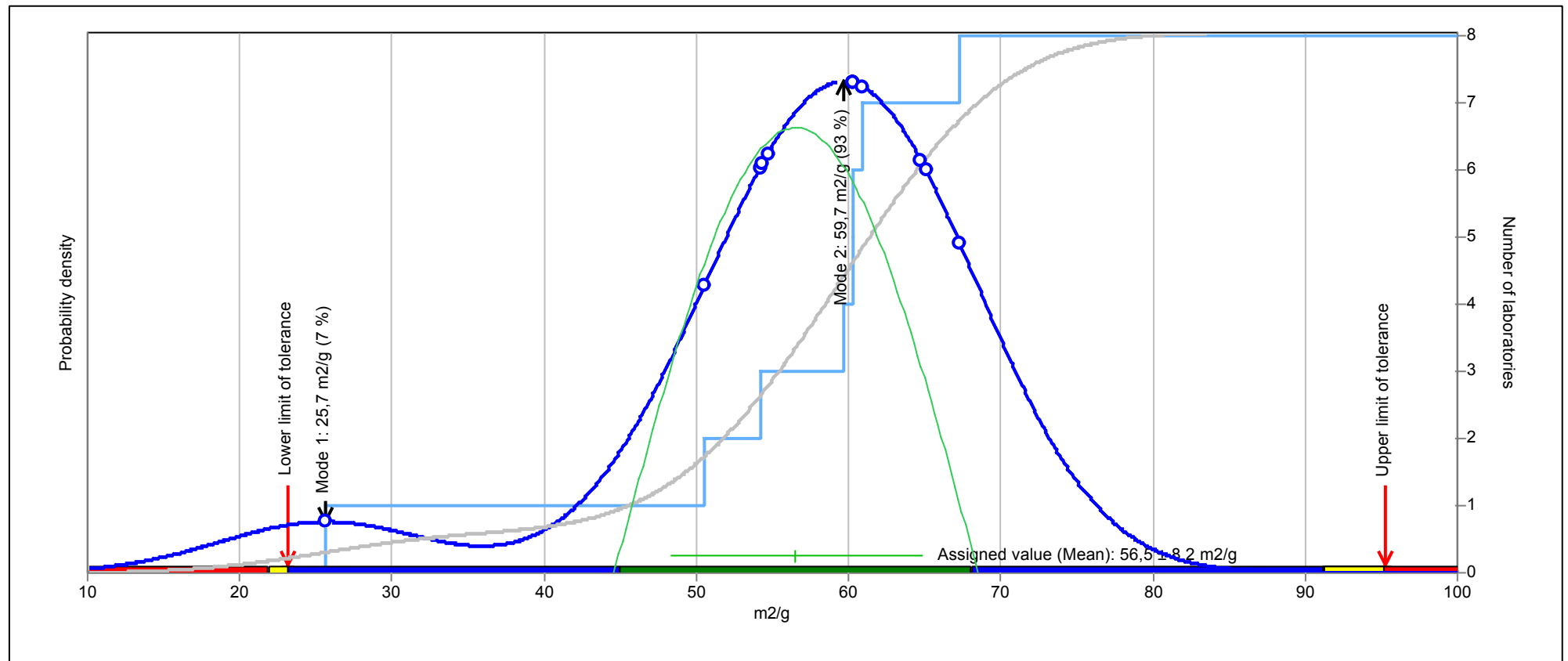


Figure S2

Inter-laboratory comparison biochar 2013 COST Action TD1107 WG 1

Sample: BC3

Parameter: Zn

