

Table 1: Results and z-Scores for Tea Test Material

laboratory number	analyte											
	buprofezin assigned value 272 µg/kg			pp'-DDE assigned value 123 µg/kg			diphenylamine assigned value 124 µg/kg			beta-endosulfan assigned value 226 µg/kg		
	result µg/kg	recovery %	LoQ µg/kg	z-score	result µg/kg	recovery %	LoQ µg/kg	z-score	result µg/kg	recovery %	LoQ µg/kg	z-score
001	630	10	6.8	10	120	10	-0.1	10	150	242	10	0.4
002	170	63	-1.9	10	64	63	-2.2	10	69	111	64	-2.5
003	377.2	84	2.0	10	194.1	80	2.6	10	0	292.1	86	1.5
004 †	#			0	0		-4.6	#	#	217.55	102	-0.2
005	#			#	#			0	0	202	92	-0.5
006	386	102	2.2	100	150	78	1.0	150	#	502	89	6.1
007	170	85.5	-1.9	50	125	113.5	0.1	50	#	60	128.6	-3.7
008	356	96	1.6	10	135	67	0.4	5	124	235	61	0.2
009	366	111	1.8	10	98	81	-0.9	10	166	148	92	-1.7
010	#			94.0	111	10	-1.1	10	#	#		
011	294	101.4	0.4	5	165	102.8	1.5	5	67	212	107.7	-0.3
012	322	74	0.9	50	115	87	-0.3	17	76	343	80	2.6
013	319	81.0	0.9	1	118	88.0	-0.2	1	135	237	85.0	0.2
014	128	77	-2.7	50	100	100	-0.9	15	#	179	65	-1.0
015 ▲	205	76	-1.3	10	89	72	-1.3	10	103	158	73	-1.5

z-scores outside the satisfactory range, i.e. $|z| > 2$, are shown in **bold** LoQ = limit of quantification

figures in italics are for information only

= pesticide not analysed for

† = additional pesticides reported (see Table 2)

Table 1 (continued): Results and z-Scores for Tea Test Material

laboratory number	analyte															
	buprofezin assigned value 272 µg/kg			pp'-DDE assigned value 123 µg/kg			diphenylamine assigned value 124 µg/kg			beta-endosulfan assigned value 226 µg/kg						
	result µg/kg	recovery %	LoQ µg/kg	z-score	result µg/kg	recovery %	LoQ µg/kg	z-score	result µg/kg	recovery %	LoQ µg/kg	z-score	result µg/kg	recovery %	LoQ µg/kg	z-score
031	#			-0.1	121.8	94	10	-0.1	#				251.73	90	10	0.6
032	†	0	0.01	-5.1	167	83	0.01	1.6	#				367	80	0.01	3.1
033	•	274	10	0.0	142	93	5	0.7	120	87	30	<i>-0.1</i>	267	90	5	0.9
034		224	10	-0.9	106	89	5	-0.6	120	89	10	<i>-0.1</i>	188	89	10	-0.8
035		227	50	-0.9	122	81	10	0.0	128	85	100	0.1	218	80	10	-0.2
036	#				#				#				0			-5.0
037		283	10	0.2	139.7	89	10	0.6	184.1	98	10	2.2	244	89	10	0.4
038		315.5	50	0.8	161.2	85	50	1.4	85.5	85	50	-1.4	308.7	75	50	1.8
039		210	10	-1.2	100		10	-0.9	117		10	-0.3	170		10	-1.2
040		287		0.3	152			1.1	#				268			0.9
041	#				220		10	3.6	#				330		10	2.3
042		81	10	-3.6	50	96	5	-2.7	170	86	10	1.7	32	74	10	-4.3
043		27	10	-4.6	25	80	5	-3.6	10	80	5	-4.2	14	80	10	-4.7

z-scores outside the satisfactory range, i.e. $|z| > 2$, are shown in **bold** LoQ = limit of quantification

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= pesticide not analysed for

† = additional pesticides reported (see Table 2)

Table 2: Additional Pesticide Residues Reported > 30 µg/kg

laboratory number	pesticide residue > 30 µg/kg	result µg/kg	recovery %	LoQ µg/kg
004	alpha-endosulfan	67.84	102	4
032	chlorpyrifos	172	82	0.01

Table 3: Assigned Values and Target Standard Deviations

analyte	assigned value, µg/kg				target standard deviation, µg/kg	
	data points <i>n</i>	robust mean \hat{X}	robust sd $\hat{\sigma}$	uncertainty <i>u</i>	derived from	σ_p
buprofezin	24	272	91.0	18.6	Horwitz*	52.9
pp'-DDE	29	123	36.8	6.84	Horwitz*	27.0
	data points <i>n</i>	median \hat{X}	scaled absolute deviation, sMAD	uncertainty <i>u</i>		
diphenylamine	16	124	57.1	14.3	Horwitz*	27.2
	data points <i>n</i>	mode \hat{X}	standard error of mode	uncertainty <i>u</i>		
beta-endosulfan	27	226	5.44	5.44	Horwitz*	45.2

* see page 7 for appropriate form of the Horwitz equation
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Table 4: Number and Percentage of Satisfactory z-Scores

analyte	number of satisfactory scores $ z \leq 2$	total number of scores	satisfactory %
buprofezin	24	33	73
pp'-DDE	32	41	78
diphenylamine	16	24	67
beta-endosulfan	28	41	68

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Table 5: Number and Percentage of Participants Correctly Identifying and Obtaining Satisfactory z-Scores for Pesticides Present >30 µg/kg

criteria	number of satisfactory participants	total number of participants	satisfactory %
correctly identified all four pesticides	21	43	49
correctly identified all four pesticides and obtained satisfactory z-scores for buprofezin, pp'-DDE and beta-endosulfan	15	43	35

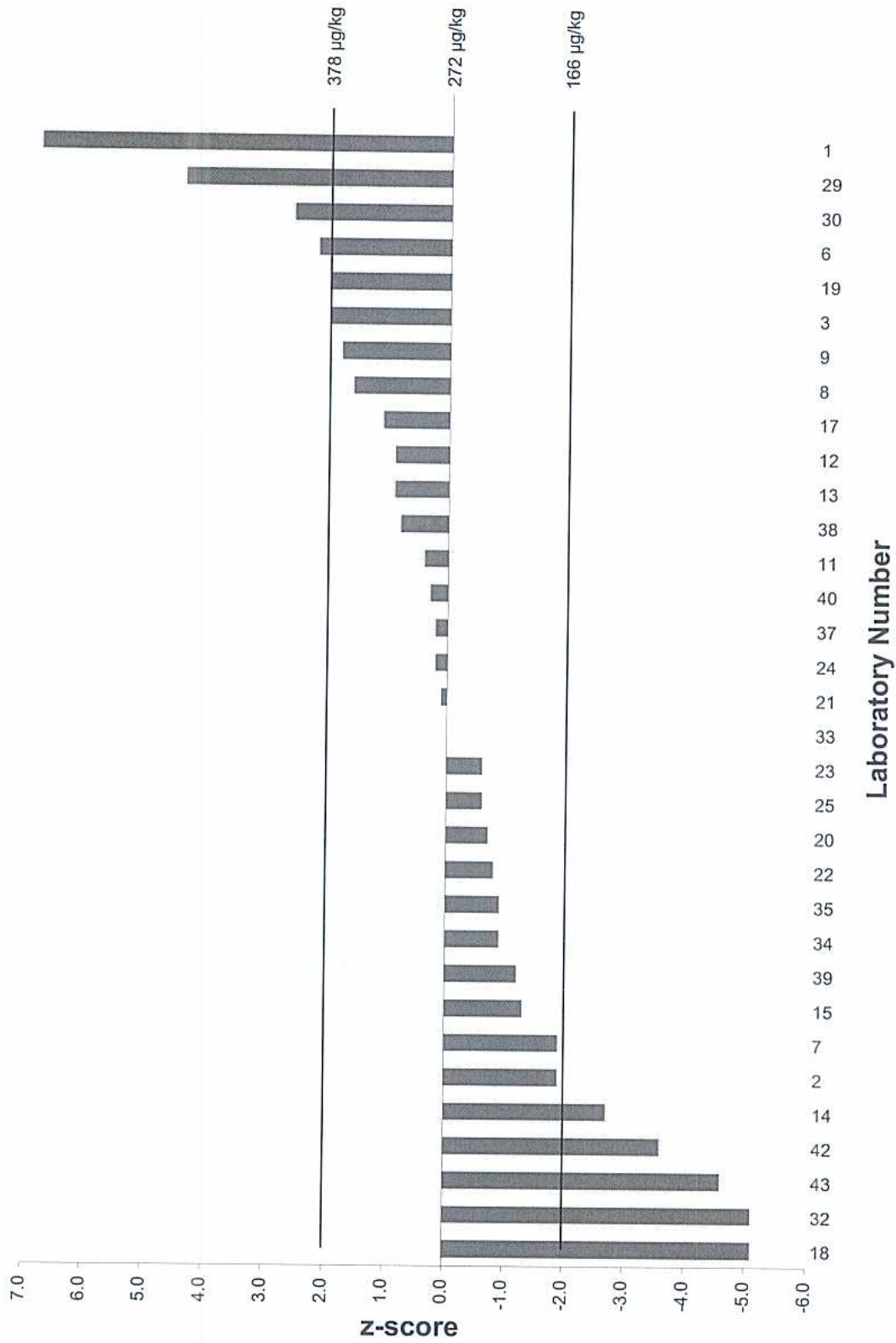


Figure 1: Z-Scores for Buprofezin (272 µg/kg) in Tea Test Material
 Participants assigned a result of 0 µg/kg for buprofezin obtain a z-score of -5.1

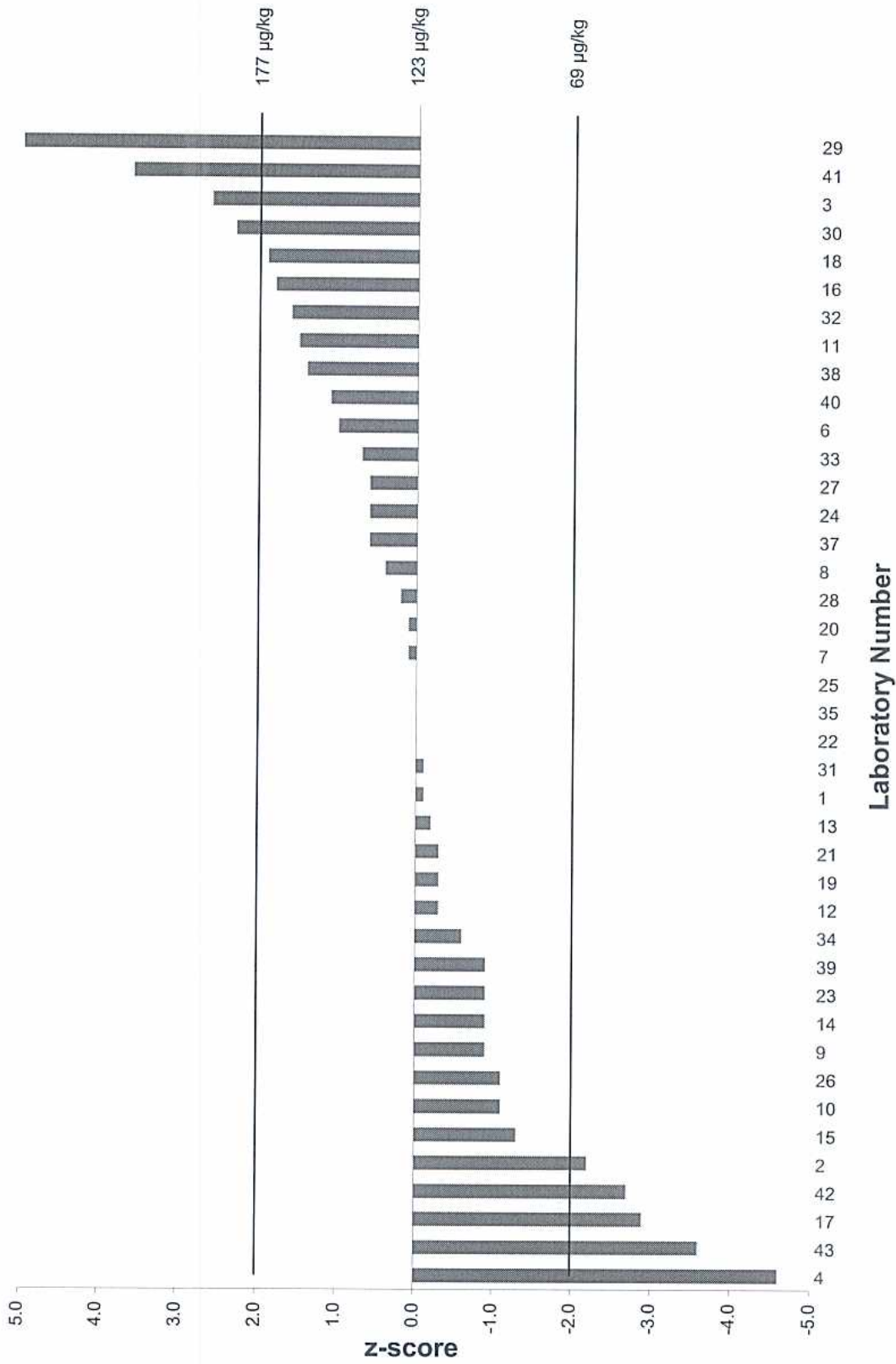


Figure 2: z-Scores for pp'-DDE (123 µg/kg) in Tea Test Material
 Participants assigned a result of 0 µg/kg for pp'-DDE obtain a z-score of -4.6

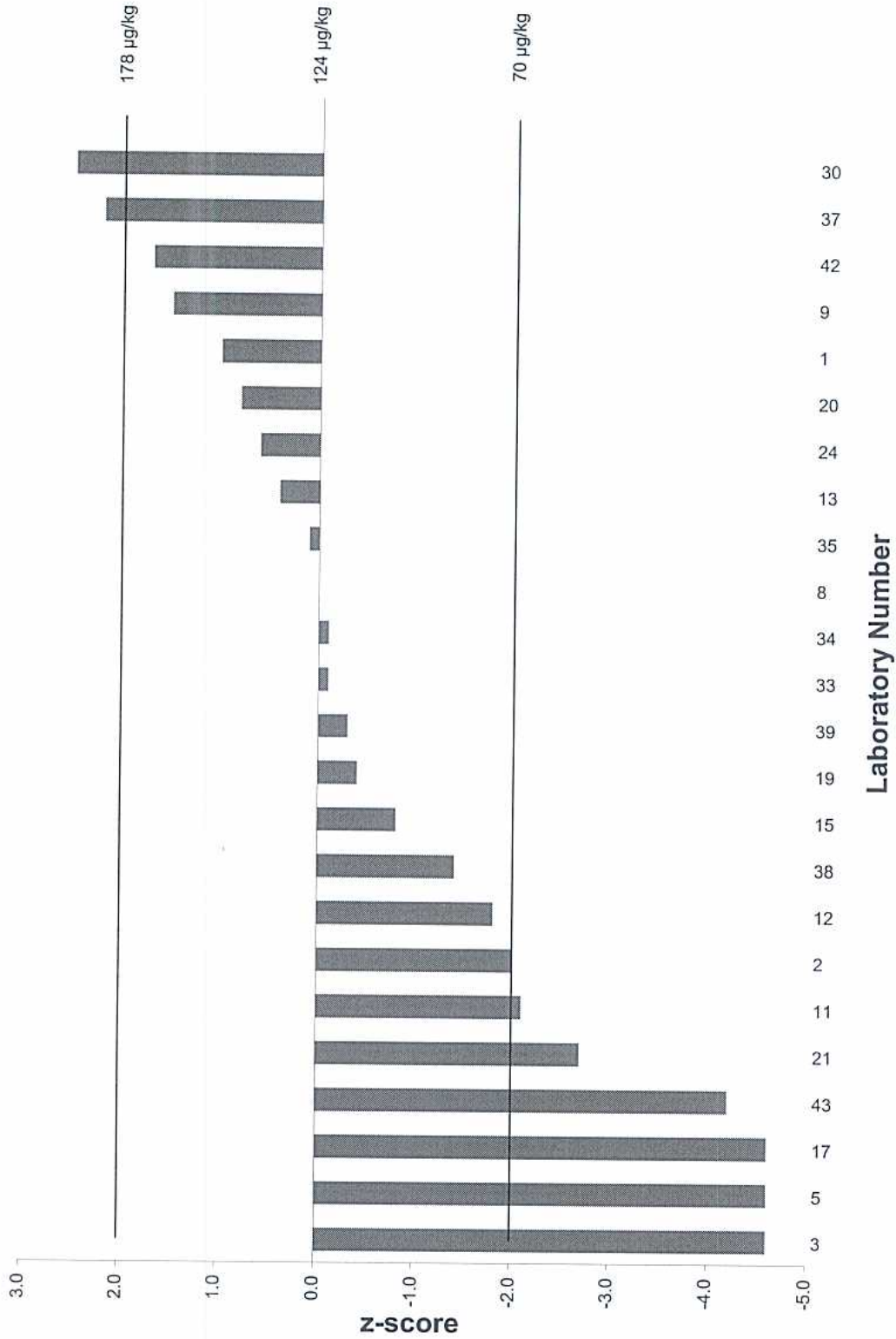


Figure 3: z-Scores for Diphenylamine (124 µg/kg) in Tea Test Material
 Participants assigned a result of 0 µg/kg for diphenylamine obtain a z-score of -4.6
This histogram is given for information only

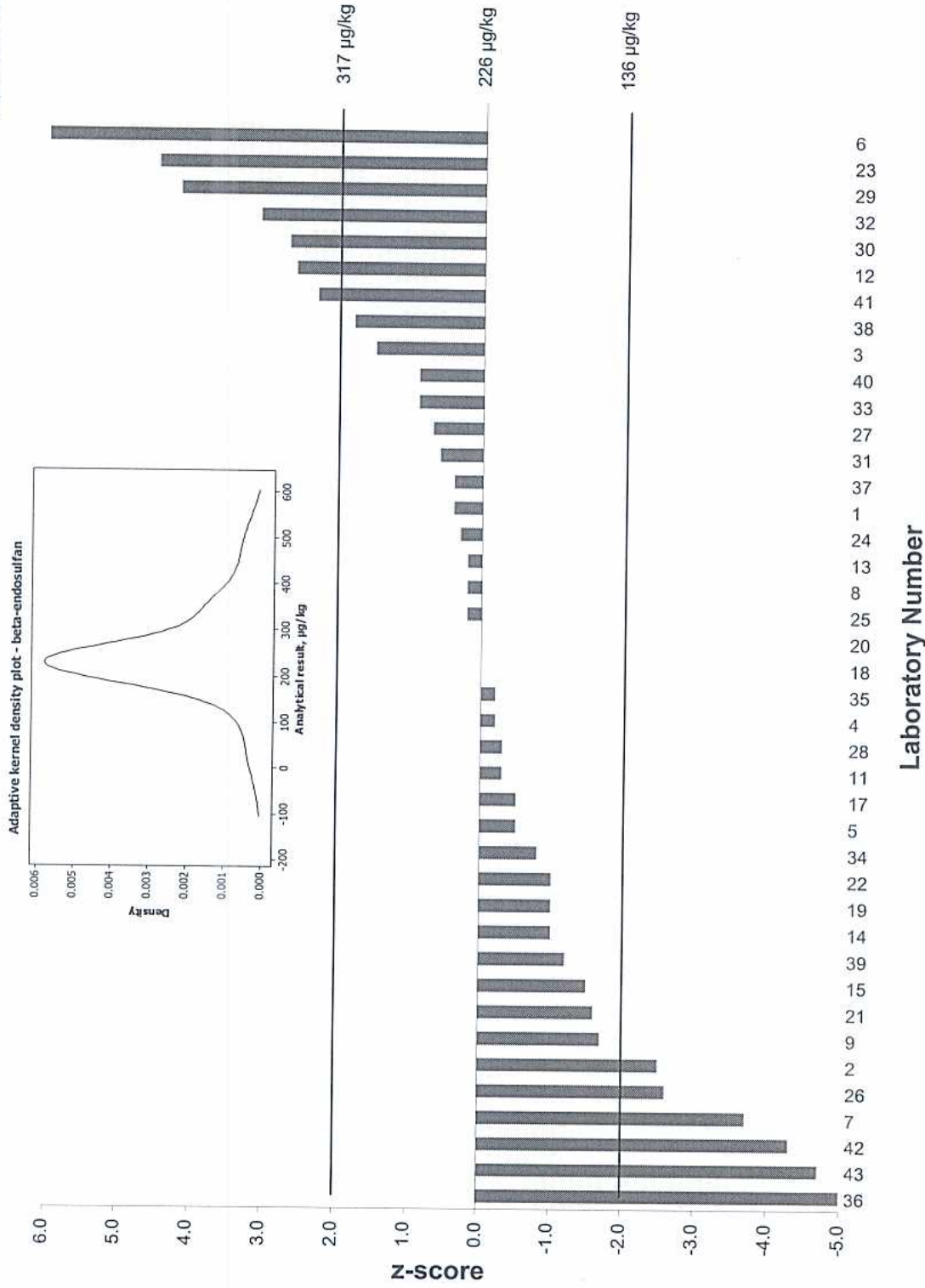


Figure 4: Z-Scores for beta-Endosulfan (226 µg/kg) in Tea Test Material
 Participants assigned a result of 0 µg/kg for beta-endosulfan obtain a z-score of -5.0

APPENDIX I: Homogeneity Data for Tea Test Material

sample identity	analyte									
	buprofezin µg/kg		pp'-DDE µg/kg		diphenylamine µg/kg		beta-endosulfan µg/kg			
	replicate 1	replicate 2	replicate 1	replicate 2	replicate 1	replicate 2	replicate 1	replicate 2	replicate 1	replicate 2
1	228	197	112	101	135	166	188	166	188	166
2	219	171	107	89	131	155	178	150	178	150
3	196	225	103	111	133	109	176	182	176	182
4	210	151	106	76	111	115	186	126	186	126
5	208	207	106	102	83	128	179	173	179	173
6	170	172	84	89	141	146	139	145	146	145
7	190	227	90	100	138	119	154	164	138	119
8	213	180	107	92	140	133	180	155	140	133
9	219	201	109	104	133	123	186	171	133	123
10	187	213	98	108	115	126	171	184	115	126
mean, n	199	20	100	20	129	20	168	20	129	20
origin of target sd (σ_p)	Horwitz*		Horwitz*		Horwitz*		Horwitz*		Horwitz*	
abs. target sd (σ_p) & as RSD%	40.62	20.39	21.93	22.00	28.09	21.77	35.09	20.93	28.09	21.77
S_{sam}	23.51		9.747		15.51		17.46		15.51	
S_{sam}^2	0		2.511		87.58		1.239		87.58	
σ_{all}^2	148.5		43.30		70.99		110.8		70.99	
critical	837.2		177.4		376.4		516.1		376.4	
$S_{sam}^2 < \text{critical?}$	ACCEPT		ACCEPT		ACCEPT		ACCEPT		ACCEPT	

* see page 7 for appropriate form of the Horwitz equation