REPORT TO PARTICIPANTS IN THE AOAC® LABORATORY PROFICIENCY TESTING PROGRAM

PESTICIDE RESIDUES IN FRUITS & VEGETABLES PROGRAM

SHIPMENT 2/10/08

Sample Set #28

Accredited Laboratory Proficiency Testing Program
Certificate Number 1782.01

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AOAC INTERNATIONAL
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REPORT TO PARTICIPANTS IN
THE AOAC® LABORATORY PROFICIENCY TESTING PROGRAM

PESTICIDE RESIDUES IN FRUITS & VEGETABLES PROGRAM

1.0 Introduction

Test materials for the Pesticide Residues in Fruits and Vegetables Program were shipped to participants and four Reference Laboratories on February 10, 2009. Each subscriber laboratory was given a site identification number in order to maintain confidentiality. An instruction packet on how to use the confidential online data submission system was included in the shipment. The participants were to submit an electronic response online to verify the condition of the test materials upon receipt and to indicate which pesticide residues they analyze for. Participants were also instructed to report methods and results electronically. Participants were instructed to analyze the test materials according to procedures routinely used in their laboratories. The results were to be submitted to AOAC by no later than 30 days after the receipt of samples in satisfactory condition.

2.0 Preparation of Test Materials

Each set of test materials consisted of three samples, each containing 100 grams of frozen green bean mixture. One blank, for determining incurred pesticide residues, and two spiked samples were included in the shipment. Fresh produce was purchased at a local grocery store and prepared according to current SOP's for the matrix selected. The commodity was chopped with dry ice in a 40-quart Robo-Coupe chopper and mixed well to insure homogeneity. The dry ice was allowed to sublime by storing, at least overnight, in a -40^{o}C freezer. The limit of detection for screening the matrix was < 0.020 parts per million (ppm). Participants that reported incurred residues should reference Table 1B. Upon completion of the incurred residue analysis, the frozen produce was weighed into 100 gram portions. Spiking solutions were prepared from certified standards dissolved in acetone. Each sample was individually spiked. Spiked samples were stored in clean labeled glass jars with Teflon lined lids at –80 ^{O} C.

Three replicate samples were randomly selected to verify the presence and level of the spike (Table 2 in Appendix II). The requirements of Section 5.6.2 of ISO/IEC Guide 43-1:1997(E) Proficiency testing by interlaboratory comparisons - Part 1 Development and operation of proficiency testing schemes were met for all samples used for evaluation. Samples were prepared by the following laboratory:

Quality Assurance Unit
Center for Analytical Chemistry
California Dept. of Food & Agriculture
3292 Meadowview Road, Sacramento, CA 95832

3.0 Analyses Requested

The blank, sample 1, was to be used to determine incurred pesticide residues. Sample 2 was to be analyzed for pesticides listed as organochlorines, and organophosphates. N-methyl carbamates may have present, but were not to be reported for sample 2. Sample 3 was to be analyzed for only n-methyl carbamates. Other pesticides may have been present, but should not have been reported.

Chemical	CAS #
	*=parent
OC	
BHC (HCH) - Total	608-73-1
Chlorpropham (CIPC)	101-21-3
Cypermethrin	52315-07-8
DCPA (Dacthal)	1861-32-1
DDE, p,p'	72-55-9
DDT, p,p'	50-29-3
Deltamethrin	52918-63-5
Dieldrin	60-57-1
Endosufan II	33213-65-9
Endosulfan I	959-98-8
Endosulfan Sulfate	1031-07-8
Fenvalerate-Total	51630-58-1
Methoxychlor	72-43-5
Myclobutanil	88671-89-0
Permethrin - total	52645-53-1
Quintozene	82-68-8
Trifluralin	1582-09-8
Vinclozolin	50471-44-8

OP	
Azinphos-ethyl	2642-71-9
Azinphos-methyl	86-50-0
Chlorpyrifos	2921-88-2
Diazinon	333-41-5
Dimethoate	60-51-5
Ethion	563-12-2
Fenamiphos	22224-92-5
Fenthion	55-38-9
Malathion	121-75-5
Methamidophos	10265-92-6
Methidathion	950-37-8
Mevinphos, combined isomers	7786-34-7
Monocrotophos	6923-22-4
Omethoate	1113-02-6
Parathion	56-38-2
Parathion methyl	298-00-0
Phorate	298-02-2
Phorate Sulfone	(298-02-2)*
Phosmet	732-11-6

N-methyl-Carbamates	
3-Hydroxycarbofuran	16655-82-6
Aldicarb sulfoxide	(116-06-3)*
Aldicarb	116-06-3
Aldoxycarb	1646-88-4
Carbaryl	63-25-2
Carbofuran	1563-66-2
Oxamyl	23135-22-0
Propoxur	114-26-1

The participants had the option of marking the analysis as “Not Tested” for any pesticide not routinely tested by their laboratory. This designation was submitted to AOAC. Information on the method used for each analyses was requested.

4.0 Calculation and Interpretation of z-scores:

For each individual result, a z-score was calculated as follows:

$$z = \frac{(x - X)}{s}$$

where:

z = the z score (standard score)

x = the reported value of analyte

X = the assigned value, the best estimate of the "true" concentration

s = the estimate of variation (standard deviation)

The following interpretation of z-scores for each individual test result is provided in of ISO/IEC Guide 43-1:1997(E) Proficiency testing by interlaboratory comparisons - Part 1 as common examples of application of z-scores:

Results Obtained	Rating
$\lvert z \rvert \leq 2$	Satisfactory
$2 < \lvert z \rvert < 3$	Questionable
$\lvert z \rvert \geq 3$	Unsatisfactory

Calculations for z scores based on the data presented in the results sheet might be slightly different from the z-scores assigned by AOAC. The z-scores assigned by AOAC were based on calculations that use more decimal places than is possible to display on the results sheet

5.0 Results

5.1 General Discussion of Results

Confidentiality of results has been maintained by issuing site identification codes to the participants. Results in reports have only been identified by the site identification code. Results were submitted by both Participating Laboratories and Reference Laboratories. There were four Reference Laboratories this round. Test materials were exposed to the same shipping conditions for both types of laboratories. This report includes information only for the pesticides listed in Section 3.0. Some pesticides had fewer participants submitting results because some of the laboratories do not routinely test all the pesticides.

Each laboratory is responsible for the stability of the compounds in the extract covering the time period between extraction and analysis under the storage conditions in that laboratory. Stability will be dependent on the solvent the extract is in, the storage conditions, and the type of container used to store the extract. It is recommended that the analysis proceed as quickly as possible after extraction. Z-scores have been calculated for those pesticides where the following criteria were met for the specific analyte in the specific sample; when the results from at least three out of the four reference laboratories are within 2 standard deviations of the target concentration, or if only three of the four reference laboratories analyze for a specific residue then two of the three reference laboratories must be within 2 standard deviations of the target concentration, or if only two reference laboratories analyze for a residue, then both reference laboratories must be within 2 standard deviations of the target concentration. All analytes, except S3 carbaryl, met the criteria stated above. The target concentration was used as the assigned value. The standard deviation was 20 % of the target concentration. Z-scores were calculated for the following pesticides: S2 azinphos methyl, S2 chlorpropham (CIPC), S2 chlorpyrifos, S2 DDT p,p', S2 diazinon, S2 permethrin-total, S3 3-hydroxycarbofuran, S3 oxamyl, and S3 carbofuran.

Table 1A is included in this report to show the targeted value, standard deviation, median of the Reference Laboratories, subscriber reported results; and participant z-scores where applicable. Table 1B is included to show all incurred and additional residues reported by participants. Table 2 is the homogeneity data. In response to participants needs, Table 1C was created. Table 1C displays the reported values for all participating labs and their corresponding z-scores. Table 1C now also displays the methodology used next to the corresponding reported value and z-score. If a component was included in the analysis by a laboratory, but none was detected, it is represented in Table 1C as 0.0500 ppm. The same information is provided for the reference labs. Each laboratory should use the information in Table 1A, Table 1B, and Table 1C to determine areas of improvement. Graphs illustrate the results of all the Subscriber Laboratories versus the Reference Laboratories versus the targeted value.

5.2 Results

site	Sample	Test	Reported result	Number of reported results	Minimum result	Mean of results	Median result	Maximum result	Assigned value	Target SD	Median of Ref Labs	Z-score	Notes
	2	Azinphos methyl	Not tested	13	0.026	0.2465	0.2600	0.6889	0.2740	0.0548	0.2945	.	
xxxxxx	2	Chlorpropham (CIPC)	Not tested	14	0.020	0.2319	0.2155	0.4500	0.2329	0.0466	0.2060	.	
xxxxxx	2	Chlorpyrifos	0.5790	15	0.050	0.5700	0.5590	1.2343	0.7088	0.1418	0.6050	-0.92	
xxxxxx	2	DDT p,p'	0.0733	15	0.010	0.3083	0.3330	0.5628	0.4802	0.0960	0.4135	-4.24	Outlier: Z beyond 3
xxxxxx	2	Diazinon	0.4980	15	0.053	0.5176	0.5200	1.0995	0.6186	0.1237	0.5345	-0.97	
xxxxxx	2	Permethrin - total	Not tested	14	0.046	0.2798	0.2920	0.5641	0.3444	0.0689	0.2780	.	
xxxxxx	3	3-Hydroxycarbofuran	0.2190	13	0.050	0.2020	0.1930	0.3818	0.1903	0.0381	0.1900	0.75	
xxxxxx	3	Carbaryl	0.4890	13	0.050	0.3206	0.3650	0.4890	0.3860	0.0772	0.4130	.	
xxxxxx	3	Oxamyl	0.2100	12	0.050	0.1802	0.1880	0.2700	0.2345	0.0469	0.2080	-0.52	
xxxxxx	3	Propoxur	Not tested	11	0.190	0.2442	0.2160	0.4000	0.2326	0.0465	0.2285	.	

Table 1A

Table 1B: Additional Pesticide Residues Detected in the February 2009

	Additional Pesticide Residues Reported By All Laboratories			
Sample	**Pesticide Residue**	**Values Reported (ppm)**	**Number of Participants Reporting**	***Value Reported by xxxxxx (ppm)***
1 (Blank)	None	None	0	**None**
2	DDE p,p'	0.014, 0.013, 0.008	3	**None**
3	None	None	0	**None**

Table 1B

P01 Pesticide Residues in Fruits and Vegetables
2/10/2009
Display of All Reported Results and z-Scores (When Applicable)

Sample=2 Test=Azinphos methyl

Method	Participating Laboratories Reported Result (ppm)	Participating Laboratories z-Score	Reference Laboratories Reported Result (ppm)	Reference Laboratories z-Score
PMR-005-V1.4 (in-house)	Not Tested	.	0.2300	-0.8029
CDFA	Not Tested	.	0.2890	0.2737
No Method Provided	Not Tested	.	0.3000	0.4745
CDFA	Not Tested	.	0.3100	0.6569
	Not Tested	.	.	.
	Not Tested	.	.	.
AOAC 2007.1	0.0260	-4.5255	.	.
	0.0500	-4.0876	.	.
	0.0500	-4.0876	.	.
Based on CFIA Method #P-RE-023-96(7.1)-FV (Effective date: 96-11-15)	0.1910	-1.5146	.	.
Based on CFIA Method PMR-001 V1.4	0.2230	-0.9307	.	.
QuEChERS	0.2400	-0.6204	.	.
QuEChERS	0.2600	-0.2555	.	.
CFIA Method	0.2680	-0.1095	.	.
Based on CFIA Method PMR-001.V1.4	0.2740	0.0000	.	.
CFIA method PMR-001-V1.4	0.3010	0.4927	.	.
Multi-Res Determination of Pesticides in FV by GC-MSD&LC; vol78	0.3100	0.6569	.	.
Quechers GC/PFPD	0.3220	0.8759	.	.
based on PMR-00V1-4	0.6889	7.5712	.	.

P01 Pesticide Residues in Fruits and Vegetables
2/10/2009
Display of All Reported Results and z-Scores (When Applicable)

Sample=2 Test=Chlorpropham (CIPC)

Method	Participating Laboratories Reported Result (ppm)	Participating Laboratories z-Score	Reference Laboratories Reported Result (ppm)	Reference Laboratories z-Score
CDFA	Not Tested	.	0.1180	-2.4667
PMR-005-V1.4 (in-house)	Not Tested	.	0.2020	-0.6634
No Method Provided	Not Tested	.	0.2100	-0.4916
CDFA	Not Tested	.	0.2200	-0.2769
	Not Tested	.	.	.
AOAC 2007.1	0.0200	-4.5706	.	.
J AOAC Int. 78(3); 821-830; 1995	0.1310	-2.1876	.	.
Quechers GC/XSD	0.1940	-0.8351	.	.
Based on CFIA Method #P-RE-023-96(7.1)-FV (Effective date: 96-11-15)	0.1990	-0.7278	.	.
CFIA method PMR-001-V1.4	0.2020	-0.6634	.	.
Based on CFIA Method PMR-001.V1.4	0.2080	-0.5346	.	.
QuEChERS prep; GC/MS & GC/XSD for identification and quantitation	0.2110	-0.4702	.	.
EPA 8081A OC Pesticides by Gas Chromatography	0.2200	-0.2769	.	.
CFIA Method	0.2360	0.0666	.	.
Based on CFIA Method PMR-001 V1.4	0.2390	0.1310	.	.
QuEChERS	0.2410	0.1739	.	.
QuEChERS	0.2630	0.6462	.	.
based on PMR-00V1-4	0.4324	4.2830	.	.
modified CDFA; GC/MSD	0.4500	4.6608	.	.

P01 Pesticide Residues in Fruits and Vegetables
2/10/2009
Display of All Reported Results and z-Scores (When Applicable)

Sample=2 Test=Chlorpyrifos

Method	Participating Laboratories Reported Result (ppm)	Participating Laboratories z-Score	Reference Laboratories Reported Result (ppm)	Reference Laboratories z-Score
PMR-005-V1.4 (in-house)	Not Tested	.	0.5110	-1.3953
No Method Provided	Not Tested	.	0.5700	-0.9791
CDFA	Not Tested	.	0.6400	-0.4853
CDFA	Not Tested	.	0.6490	-0.4218
	0.0500	-4.6473	.	.
AOAC 2007.1	0.0590	-4.5838	.	.
CFIA method PMR-001-V1.4	0.4910	-1.5364	.	.
QuEChERS prep; GC/MS & GC/PFPD for identification and quantitation	0.5050	-1.4376	.	.
Quechers GC/PFPD	0.5110	-1.3953	.	.
Based on CFIA Method PMR-001.V1.4	0.5310	-1.2542	.	.
Multi-Res Determination of Pesticides in FV by GC-MSD&LC; vol78	0.5400	-1.1907	.	.
Based on CFIA Method PMR-001 V1.4	0.5590	-1.0567	.	.
Based on CFIA Method #P-RE-023-96(7.1)-FV (Effective date: 96-11-15)	0.5630	-1.0285	.	.
PAM I 301	0.5790	-0.9156	.	.
CFIA Method	0.6980	-0.0762	.	.
QuEChERS	0.7140	0.0367	.	.
QuEChERS	0.7250	0.1143	.	.
modified CDFA; GC/ECD	0.7900	0.5728	.	.
based on PMR-00V1-4	1.2343	3.7070	.	.

Table 1C

P01 Pesticide Residues in Fruits and Vegetables
2/10/2009
Display of All Reported Results and z-Scores (When Applicable)

Sample=2 Test=DDT p,p'

Method	Participating Laboratories Reported Result (ppm)	Participating Laboratories z-Score	Reference Laboratories Reported Result (ppm)	Reference Laboratories z-Score
PMR-005-V1.4 (in-house)	Not Tested	.	0.3100	-1.7722
No Method Provided	Not Tested	.	0.4000	-0.8351
CDFA	Not Tested	.	0.4270	-0.5539
CDFA	Not Tested	.	0.4600	-0.2103
AOAC 2007.1	0.0100	-4.8959	.	.
PAM I 301	0.0733	-4.2368	.	.
QuEChERS prep; GC/MS & GC/XSD for identification and quantitation	0.2390	-2.5115	.	.
QuEChERS	0.2530	-2.3657	.	.
QuEChERS	0.2730	-2.1574	.	.
Quechers GC/XSD	0.2810	-2.0741	.	.
Based on CFIA Method #P-RE-023-96(7.1)-FV (Effective date: 96-11-15)	0.3270	-1.5952	.	.
CFIA method PMR-001-V1.4	0.3330	-1.5327	.	.
Based on CFIA Method PMR-001 V1.4	0.3480	-1.3765	.	.
EPA 8081A OC Pesticides by Gas Chromatography	0.3500	-1.3557	.	.
modified CDFA; GC/ECD	0.3700	-1.1474	.	.
Based on CFIA Method PMR-001.V1.4	0.3750	-1.0954	.	.
J AOAC Int. 78(3); 821-830; 1995	0.4010	-0.8247	.	.
CFIA Method	0.4280	-0.5435	.	.
based on PMR-00V1-4	0.5628	0.8601	.	.

P01 Pesticide Residues in Fruits and Vegetables
2/10/2009
Display of All Reported Results and z-Scores (When Applicable)

Sample=2 Test=Diazinon

Method	Participating Laboratories Reported Result (ppm)	Participating Laboratories z-Score	Reference Laboratories Reported Result (ppm)	Reference Laboratories z-Score
PMR-005-V1.4 (in-house)	Not Tested	.	0.4770	-1.1445
No Method Provided	Not Tested	.	0.5300	-0.7161
CDFA	Not Tested	.	0.5390	-0.6434
CDFA	Not Tested	.	0.5500	-0.5545
AOAC 2007.1	0.0530	-4.5716	.	.
J AOAC Int. 78(3); 821-830; 1995	0.1280	-3.9654	.	.
Quechers GC/PFPD	0.4440	-1.4113	.	.
CFIA method PMR-001-V1.4	0.4790	-1.1284	.	.
modified CDFA; LC/MS/MS	0.4800	-1.1203	.	.
PAM I 301	0.4980	-0.9748	.	.
QuEChERS prep; GC/MS & GC/PFPD for identification and quantitation	0.5040	-0.9263	.	.
Multi-Res Determination of Pesticides in FV by GC-MSD&LC; vol78	0.5200	-0.7970	.	.
Based on CFIA Method #P-RE-023-96(7.1)-FV (Effective date: 96-11-15)	0.5270	-0.7404	.	.
Based on CFIA Method PMR-001.V1.4	0.5330	-0.6919	.	.
CFIA Method	0.5800	-0.3120	.	.
QuEChERS	0.5890	-0.2392	.	.
Based on CFIA Method PMR-001 V1.4	0.6320	0.1083	.	.
QuEChERS	0.6970	0.6337	.	.
based on PMR-00V1-4	1.0995	3.8870	.	.

Table 1C

P01 Pesticide Residues in Fruits and Vegetables
2/10/2009
Display of All Reported Results and z-Scores (When Applicable)

Sample=2 Test=Permethrin - total

Method	Participating Laboratories Reported Result (ppm)	Participating Laboratories z-Score	Reference Laboratories Reported Result (ppm)	Reference Laboratories z-Score
PMR-005-V1.4 (in-house)	Not Tested	.	0.2400	-1.5157
No Method Provided	Not Tested	.	0.2600	-1.2253
CDFA	Not Tested	.	0.2960	-0.7027
CDFA	Not Tested	.	0.3200	-0.3542
	Not Tested	.	.	.
AOAC 2007.1	0.0460	-4.3322	.	.
	0.0500	-4.2741	.	.
QuEChERS prep; GC/MS & GC/XSD for identification and quantitation	0.2440	-1.4576	.	.
Based on CFIA Method PMR-001.V1.4	0.2520	-1.3415	.	.
Based on CFIA Method PMR-001 V1.4	0.2580	-1.2544	.	.
QuEChERS	0.2910	-0.7753	.	.
Based on CFIA Method #P-RE-023-96(7.1)-FV (Effective date: 96-11-15)	0.2910	-0.7753	.	.
CFIA Method	0.2930	-0.7462	.	.
Quechers GC/XSD	0.3000	-0.6446	.	.
CFIA method PMR-001-V1.4	0.3150	-0.4268	.	.
QuEChERS	0.3230	-0.3107	.	.
modified CDFA; GC/ECD	0.3400	-0.0639	.	.
EPA 8081A OC Pesticides by Gas Chromatography	0.3500	0.0813	.	.
based on PMR-00V1-4	0.5641	3.1896	.	.

Table 1C

P01 Pesticide Residues in Fruits and Vegetables
2/10/2009
Display of All Reported Results and z-Scores (When Applicable)

Sample=3 Test=3-Hydroxycarbofuran

Method	Participating Laboratories Reported Result (ppm)	Participating Laboratories z-Score	Reference Laboratories Reported Result (ppm)	Reference Laboratories z-Score
No Method Provided	Not Tested	.	0.1400	-1.3216
CDFA	Not Tested	.	0.1900	-0.0079
CDFA	Not Tested	.	0.1900	-0.0079
PMR-005-V1.4 (in-house)	Not Tested	.	0.2410	1.3321
	Not Tested	.	.	.
	Not Tested	.	.	.
	0.0500	-3.6863	.	.
Based on CFIA Method PMR-001.V1.4	0.1540	-0.9538	.	.
Multi-Res Determination of Pesticides in FV by GC-MSD&LC; vol78	0.1700	-0.5334	.	.
Based on CFIA Method #P-RE-023-96(7.1)-FV (Effective date: 96-11-15)	0.1730	-0.4545	.	.
QuEChERS; LC/MS API-ES+; Agilent Extend-C18 2.1mm x 150mm x 5um particle	0.1860	-0.1130	.	.
Quechers LC/MS ToF	0.1910	0.0184	.	.
Based on CFIA Method PMR-001 V1.4	0.1930	0.0709	.	.
CFIA method PMR-001-V1.4	0.2010	0.2811	.	.
QuEChERS	0.2070	0.4388	.	.
JAOAC 87:1237	0.2190	0.7541	.	.
QuEChERS	0.2200	0.7803	.	.
modified CDFA; LC/MS/MS	0.2800	2.3568	.	.
based on PMR-00V1-4	0.3818	5.0315	.	.

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Display of All Reported Results and z-Scores (When Applicable)

Sample=3 Test=Carbaryl

Method	Participating Laboratories Reported Result (ppm)	Participating Laboratories z-Score	Reference Laboratories Reported Result (ppm)	Reference Laboratories z-Score
No Method Provided	Not Tested	.	0.1500	.
CDFA	Not Tested	.	0.4110	.
CDFA	Not Tested	.	0.4150	.
PMR-005-V1.4 (in-house)	Not Tested	.	0.5430	.
	Not Tested	.	.	.
	Not Tested	.	.	.
	0.0500	.	.	.
	0.0500	.	.	.
QuEChERS	0.1910	.	.	.
Multi-Res Determination of Pesticides in FV by GC-MSD&LC; vol78	0.2900	.	.	.
Quechers LC/MS ToF	0.3100	.	.	.
Based on CFIA Method PMR-001.V1.4	0.3280	.	.	.
Based on CFIA Method #P-RE-023-96(7.1)-FV (Effective date: 96-11-15)	0.3650	.	.	.
Based on CFIA Method PMR-001 V1.4	0.3760	.	.	.
CFIA method PMR-001-V1.4	0.4090	.	.	.
QuEChERS; LC/MS API-ES+; Agilent Extend-C18 2.1mm x 150mm x 5um particle	0.4250	.	.	.
QuEChERS	0.4370	.	.	.
based on PMR-00V1-4	0.4480	.	.	.
JAOAC 87:1237	0.4890	.	.	.

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2/10/2009
Display of All Reported Results and z-Scores (When Applicable)

Sample=3 Test=Oxamyl

Method	Participating Laboratories Reported Result (ppm)	Participating Laboratories z-Score	Reference Laboratories Reported Result (ppm)	Reference Laboratories z-Score
No Method Provided	Not Tested	.	0.1400	-2.0149
CDFA	Not Tested	.	0.2060	-0.6077
CDFA	Not Tested	.	0.2100	-0.5224
PMR-005-V1.4 (in-house)	Not Tested	.	0.2740	0.8422
	Not Tested	.	.	.
	Not Tested	.	.	.
	Not Tested	.	.	.
	0.0500	-3.9339	.	.
QuEChERS; LC/MS API-ES+; Agilent Extend-C18 2.1mm x 150mm x 5um particle	0.1000	-2.8678	.	.
Quechers LC/MS ToF	0.1330	-2.1642	.	.
Based on CFIA Method PMR-001.V1.4	0.1420	-1.9723	.	.
Based on CFIA Method PMR-001 V1.4	0.1770	-1.2260	.	.
Based on CFIA Method #P-RE-023-96(7.1)-FV (Effective date: 96-11-15)	0.1800	-1.1620	.	.
QuEChERS	0.1960	-0.8209	.	.
JAOAC 87:1237	0.2100	-0.5224	.	.
CFIA method PMR-001-V1.4	0.2110	-0.5011	.	.
QuEChERS	0.2440	0.2026	.	.
based on PMR-00V1-4	0.2492	0.3134	.	.
Multi-Res Determination of Pesticides in FV by GC-MSD&LC; vol78	0.2700	0.7569	.	.

P01 Pesticide Residues in Fruits and Vegetables
2/10/2009
Display of All Reported Results and z-Scores (When Applicable)

Sample=3 Test=Propoxur

Method	Participating Laboratories Reported Result (ppm)	Participating Laboratories z-Score	Reference Laboratories Reported Result (ppm)	Reference Laboratories z-Score
No Method Provided	Not Tested	.	0.1800	-1.1307
CDFA	Not Tested	.	0.2170	-0.3353
CDFA	Not Tested	.	0.2400	0.1591
PMR-005-V1.4 (in-house)	Not Tested	.	0.3350	2.2012
	Not Tested	.	.	.
	Not Tested	.	.	.
	Not Tested	.	.	.
	Not Tested	.	.	.
Multi-Res Determination of Pesticides in FV by GC-MSD&LC; vol78	0.1900	-0.9157	.	.
based on PMR-00V1-4	0.2060	-0.5718	.	.
Based on CFIA Method PMR-001 V1.4	0.2090	-0.5073	.	.
Based on CFIA Method PMR-001.V1.4	0.2150	-0.3783	.	.
Based on CFIA Method #P-RE-023-96(7.1)-FV (Effective date: 96-11-15)	0.2160	-0.3568	.	.
CFIA method PMR-001-V1.4	0.2160	-0.3568	.	.
QuEChERS	0.2170	-0.3353	.	.
Quechers LC/MS ToF	0.2230	-0.2064	.	.
QuEChERS; LC/MS API-ES+; Agilent Extend-C18 2.1mm x 150mm x 5um particle	0.2330	0.0086	.	.
QuEChERS	0.3610	2.7601	.	.
modified CDFA; LC/MS/MS	0.4000	3.5985	.	.

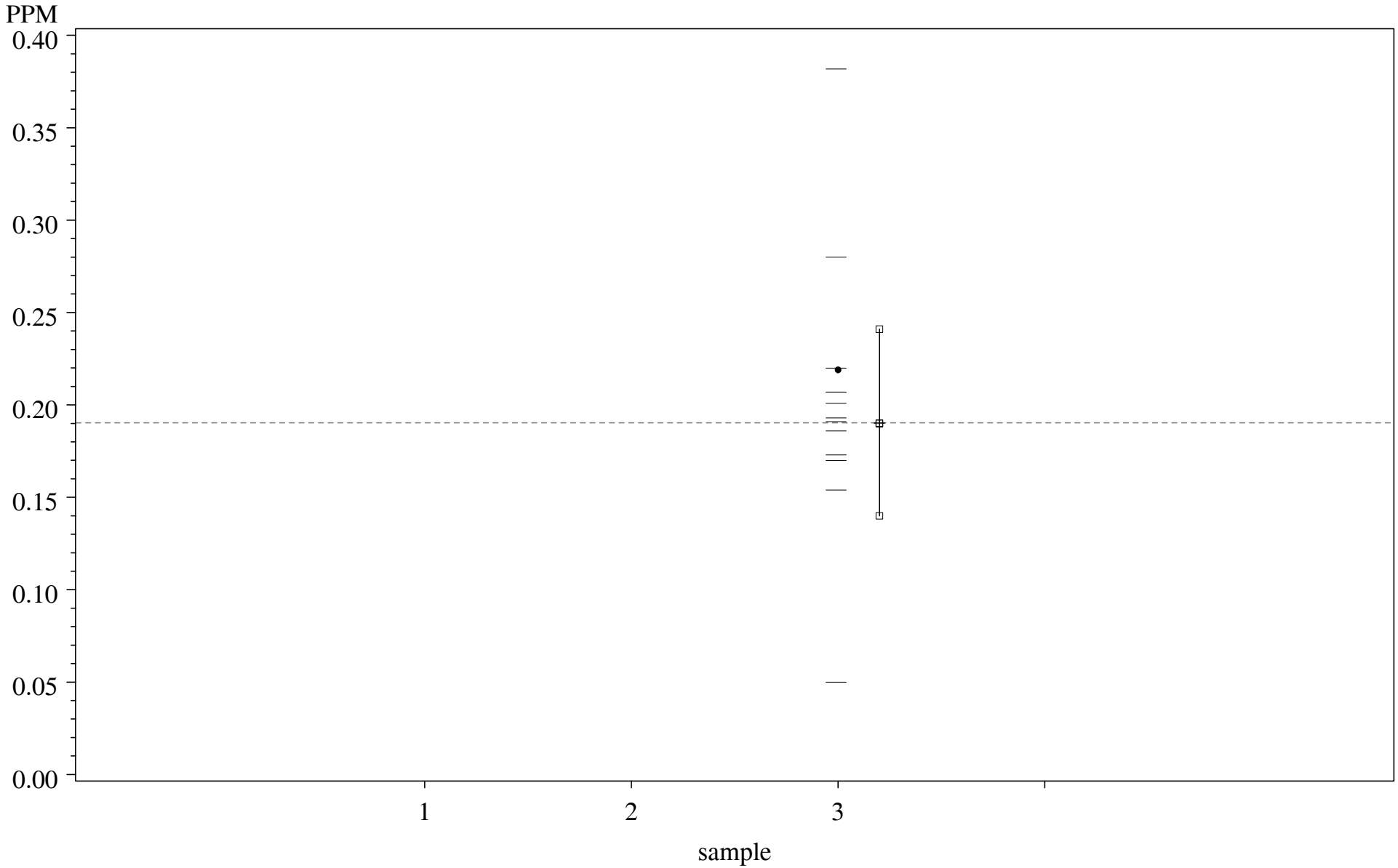
5.3 Discussion of Data Plots

Distribution of Results Plots

The distribution of results plots provides information on the distribution of results for each compound. The plots illustrate the results of all the participant laboratories versus the reference laboratories versus the targeted value. Some of the plots include the statement "reference labs are indicated by squares", and there are no squares on the plot. If the reference laboratories did not test for a specific analyte, their representative squares are not indicated on the plots, even though they are mentioned in the legends. At the advice of an expert in statistical graphics and design of data visualization, changes have been made to improve the plots. Data from the Subscribing Laboratories is displayed as individual data points with no connecting line. The target value is displayed with a dashed horizontal reference line. Reference labs are indicated by squares. If a component was included in the analysis by a laboratory, but none was detected, it is represented on the graph as 0.050 ppm. If a laboratory marked a compound as “not tested,” it was not included on the graph. The key to the graph identifies each line. Only data that fell within a z-score value of $\pm$ 5 have been included in the graphs. As AOAC continues to improve its reporting format, changes may occur.

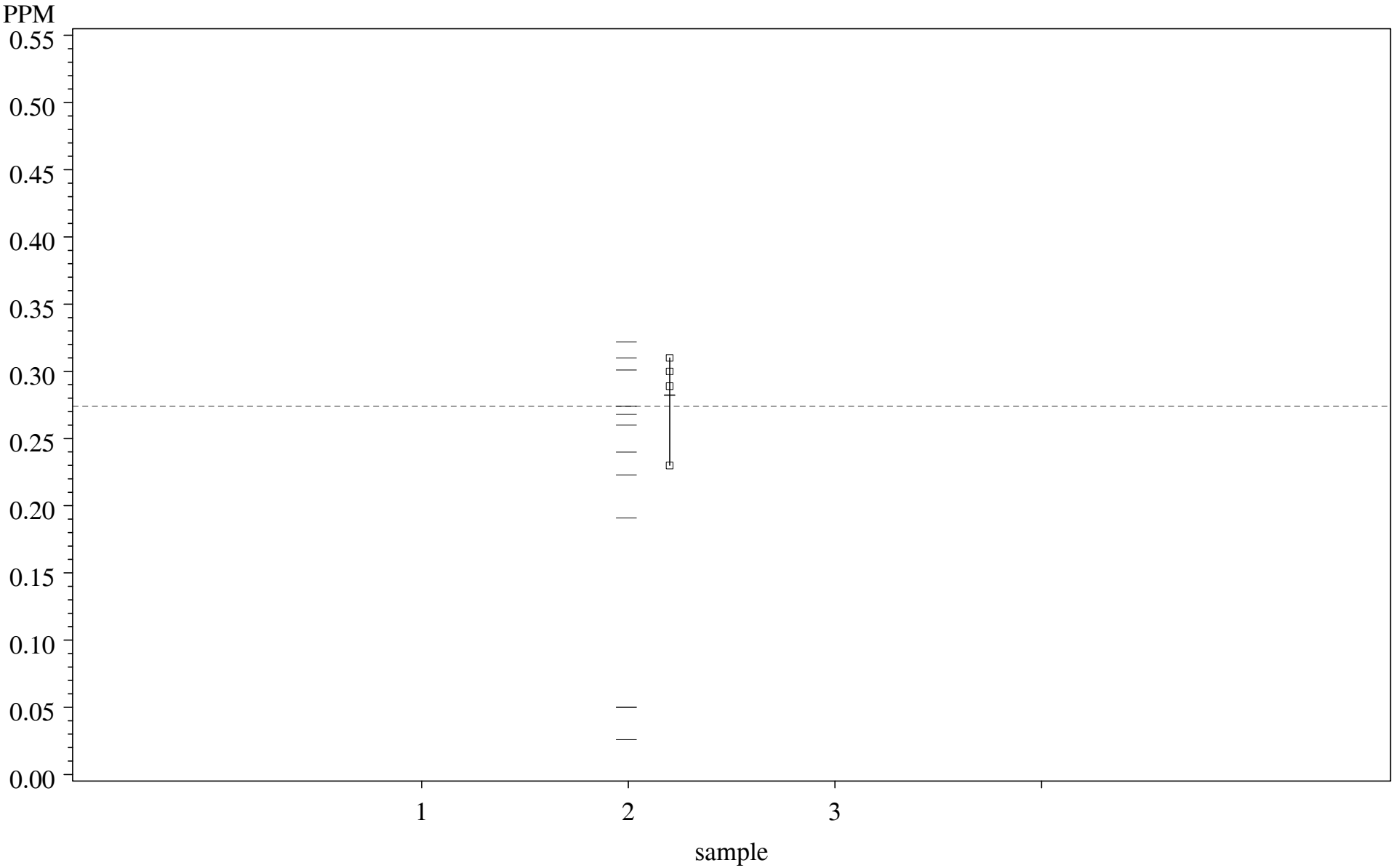
5.4 Distribution of Results Plots

P01 Site: xxxxxx 2/10/2009
Test=3-Hydroxycarbofuran



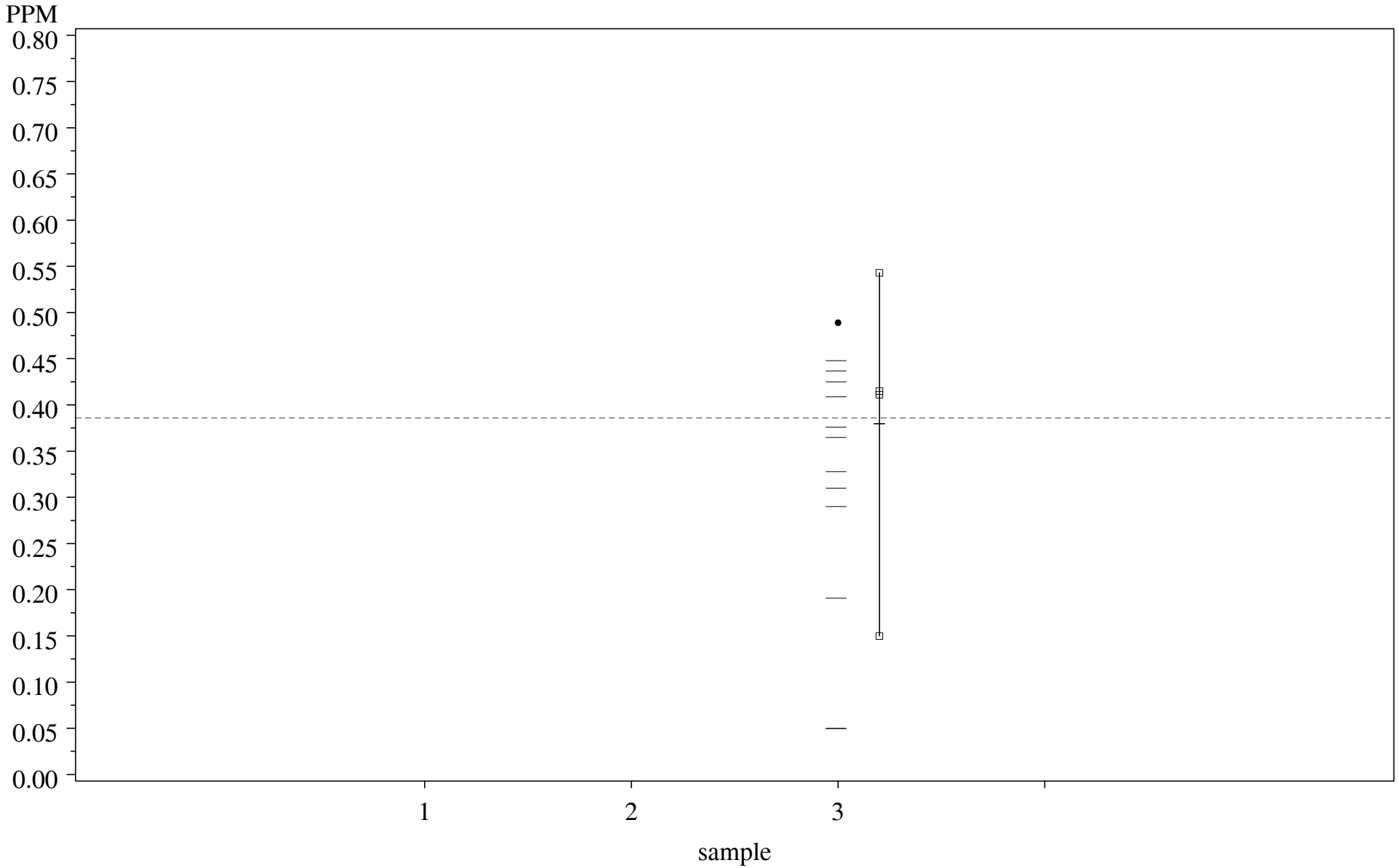
Site's reported value (dot) compared with all other results
Assigned Value indicated by dashed horizontal reference line.
Reference Labs indicated by squares.

P01 Site: xxxxxx 2/10/2009
Test=Azinphos methyl



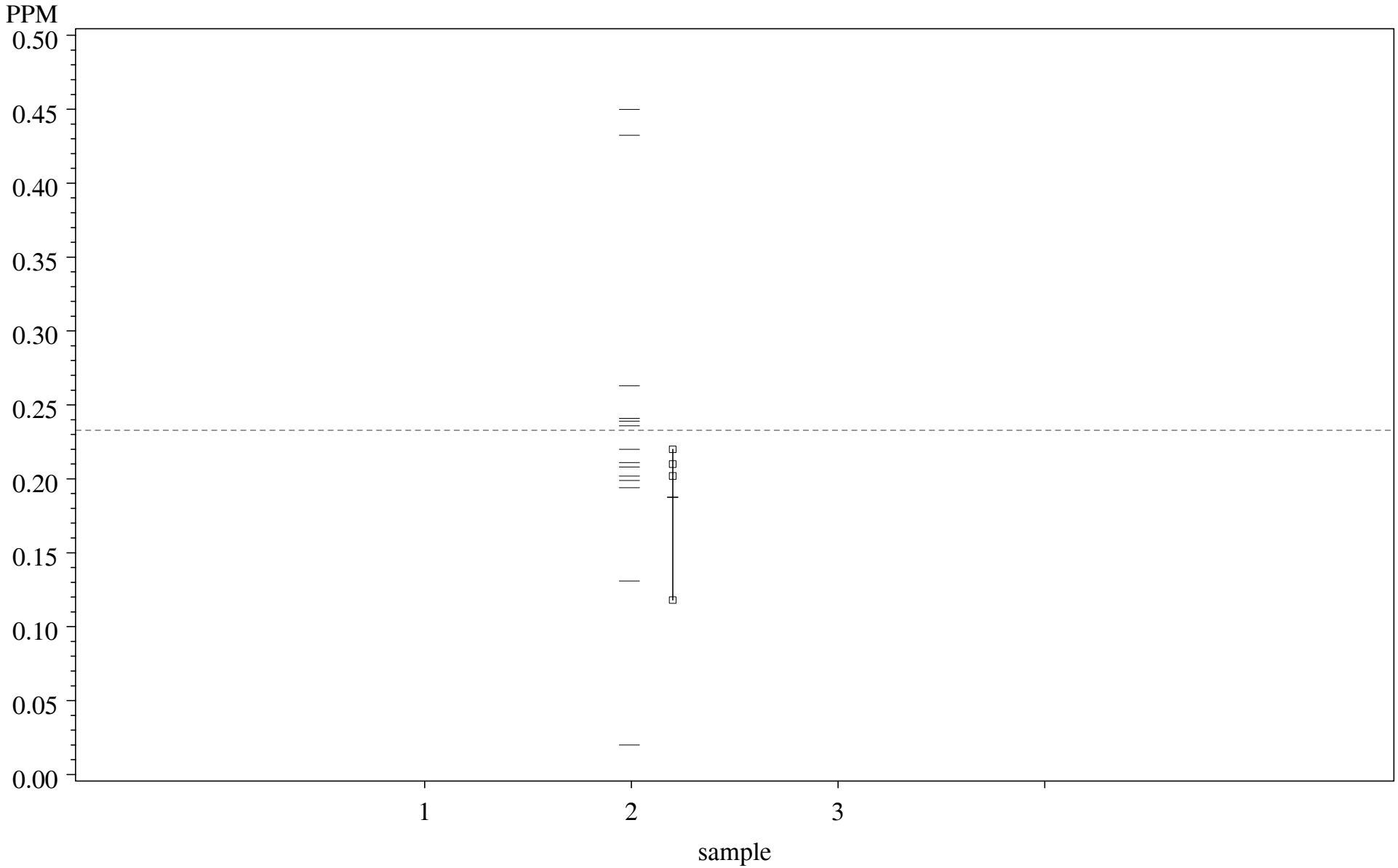
Site's reported value (dot) compared with all other results
Assigned Value indicated by dashed horizontal reference line.
Reference Labs indicated by squares.

P01 Site: xxxxxx 2/10/2009
Test=Carbaryl



Site's reported value (dot) compared with all other results
Assigned Value indicated by dashed horizontal reference line.
Reference Labs indicated by squares.

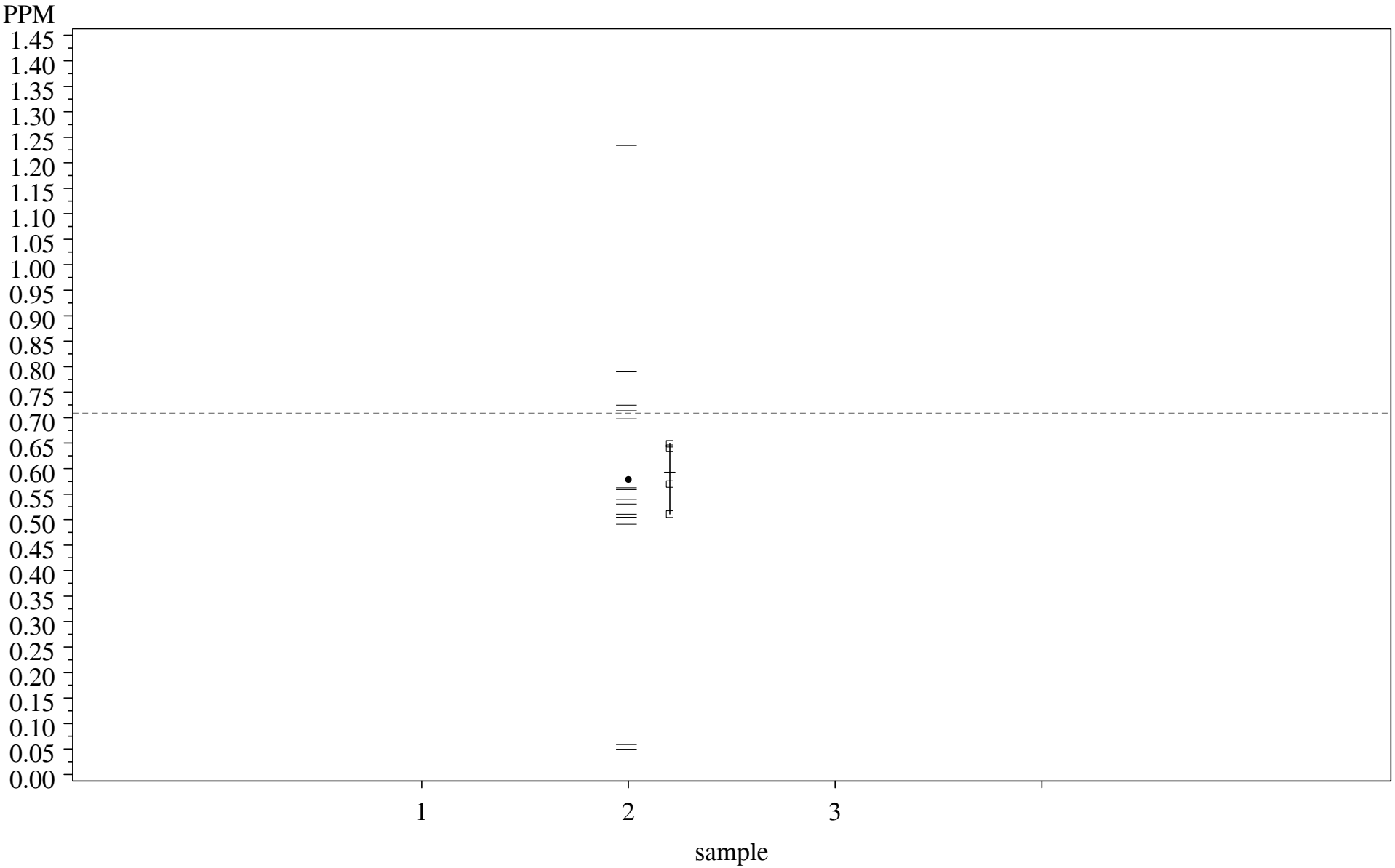
P01 Site: xxxxxx 2/10/2009
Test=Chlorpropham (CIPC)



Site's reported value (dot) compared with all other results
Assigned Value indicated by dashed horizontal reference line.
Reference Labs indicated by squares.

P01 Site: xxxxxx 2/10/2009

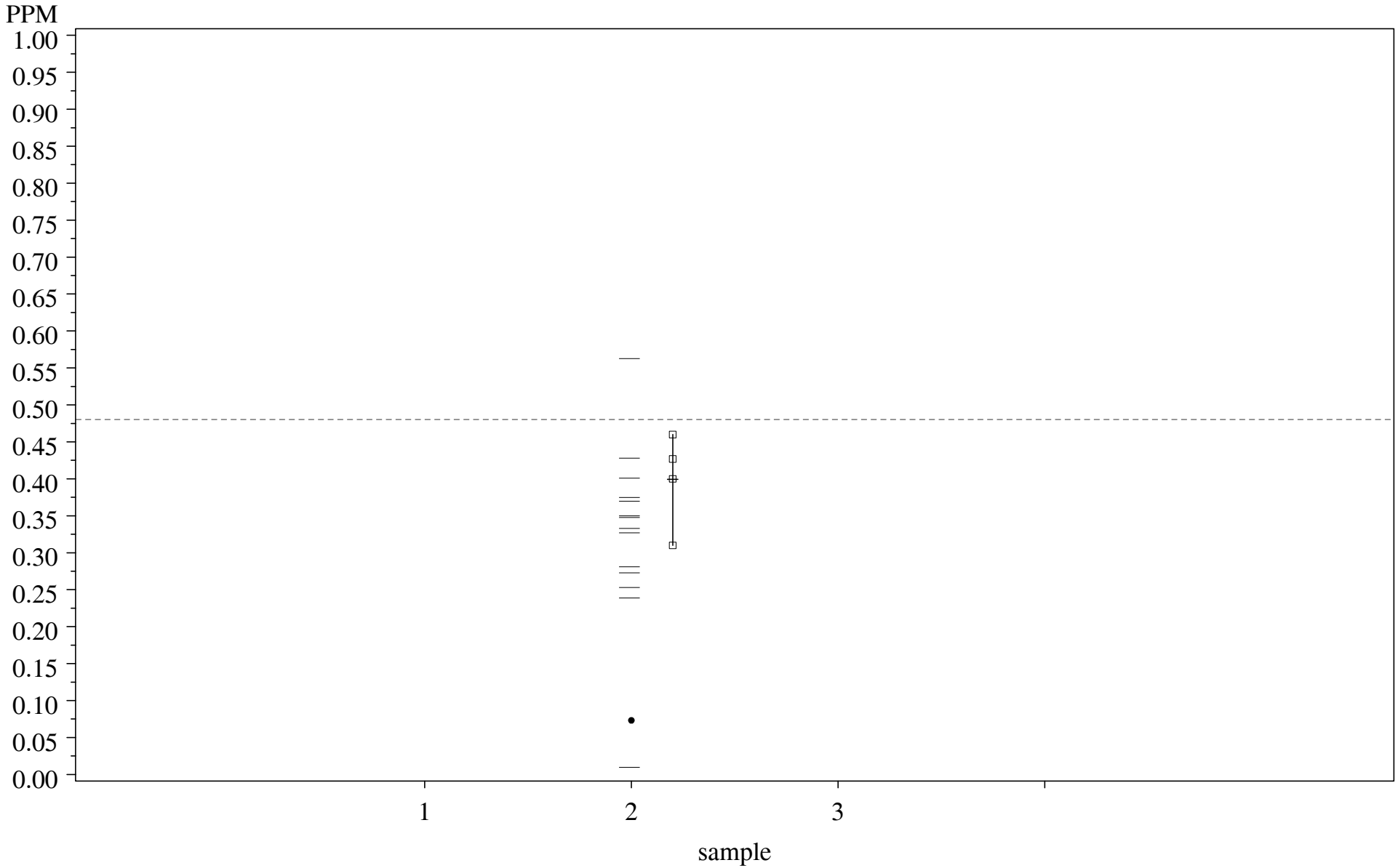
Test=Chlorpyrifos



Site's reported value (dot) compared with all other results
Assigned Value indicated by dashed horizontal reference line.
Reference Labs indicated by squares.

P01 Site: xxxxxx 2/10/2009

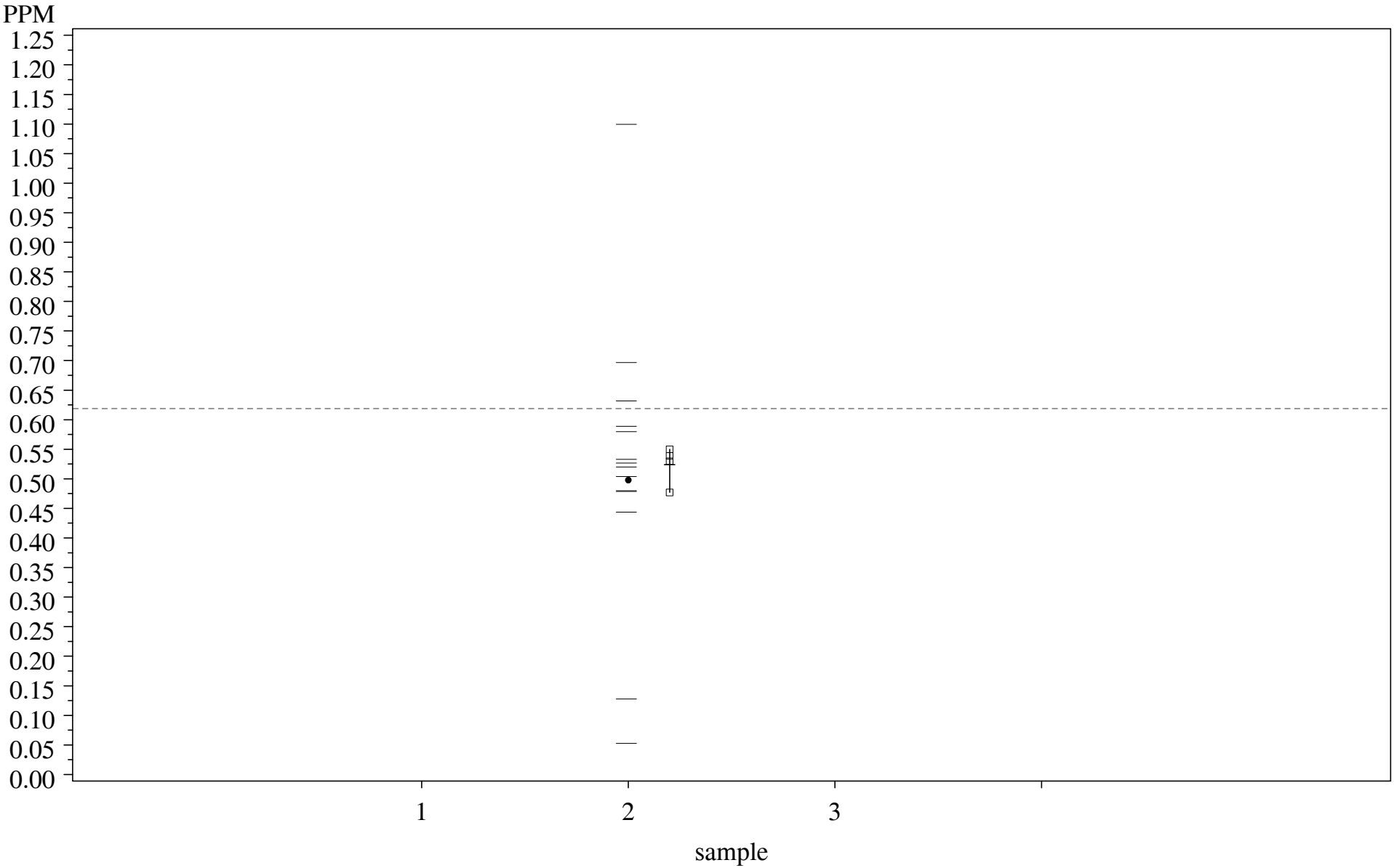
Test=DDT p,p'



Site's reported value (dot) compared with all other results
Assigned Value indicated by dashed horizontal reference line.
Reference Labs indicated by squares.

P01 Site: xxxxxx 2/10/2009

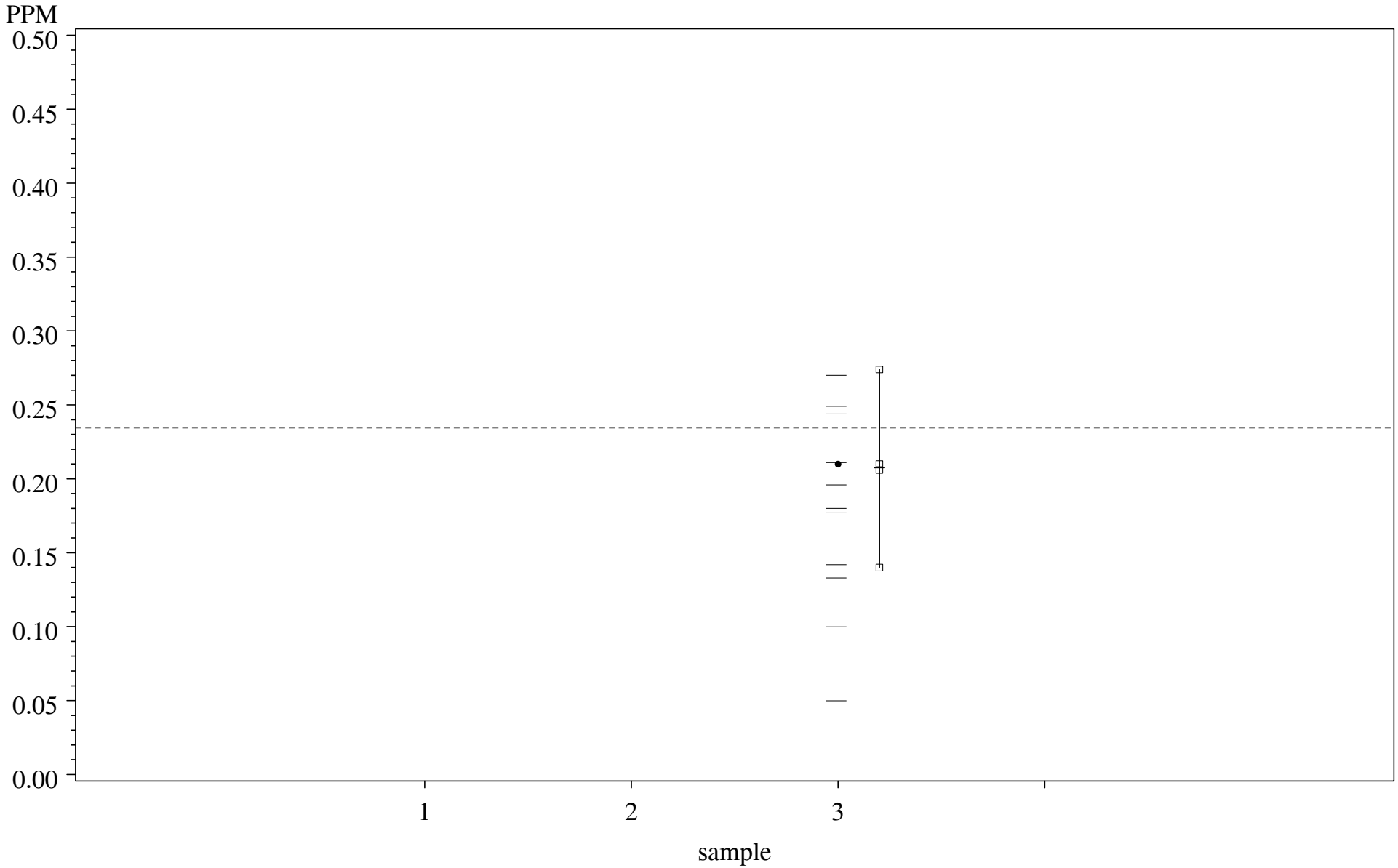
Test=Diazinon



Site's reported value (dot) compared with all other results
Assigned Value indicated by dashed horizontal reference line.
Reference Labs indicated by squares.

P01 Site: xxxxxx 2/10/2009

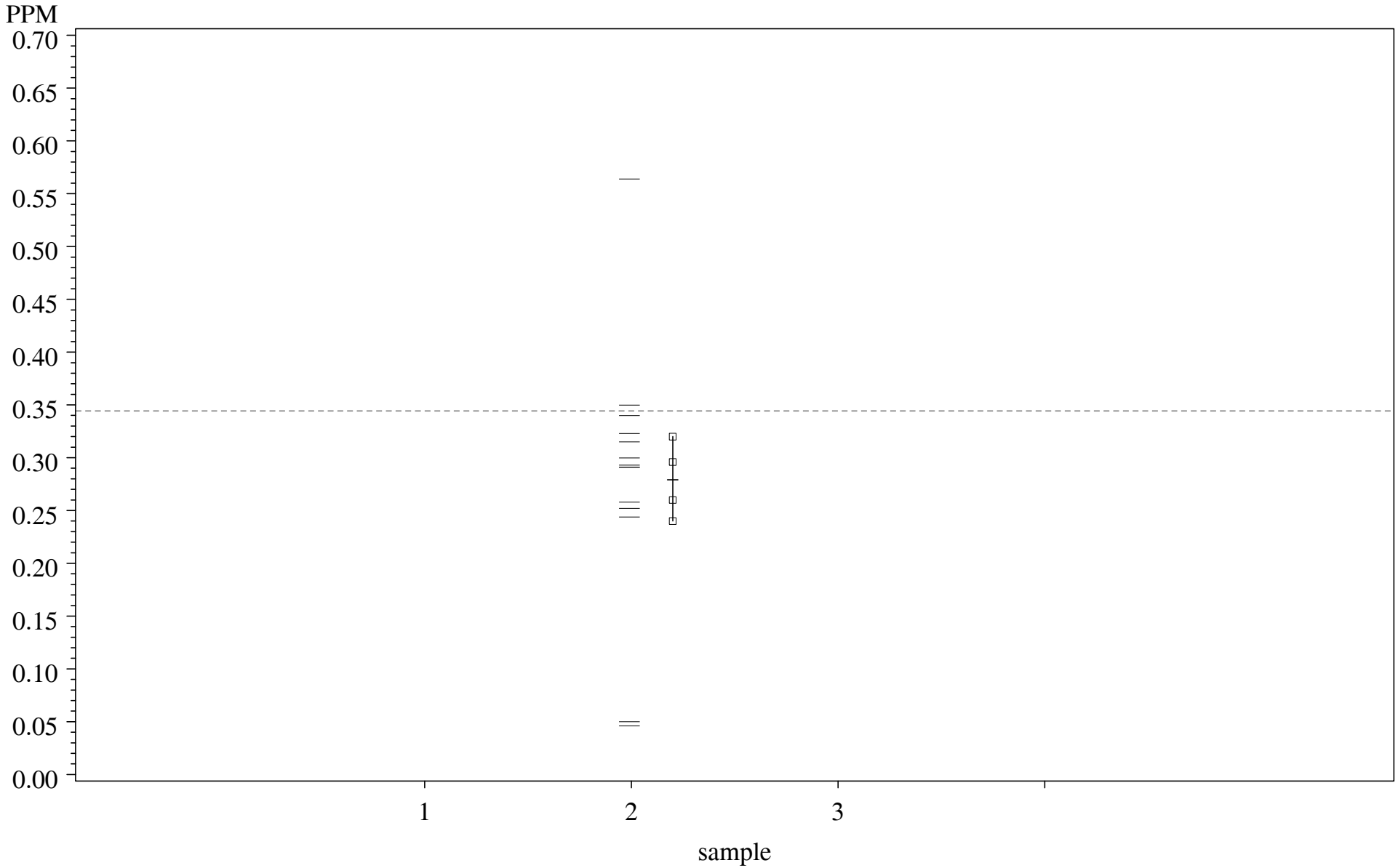
Test=Oxamyl



Site's reported value (dot) compared with all other results
Assigned Value indicated by dashed horizontal reference line.
Reference Labs indicated by squares.

P01 Site: xxxxxx 2/10/2009

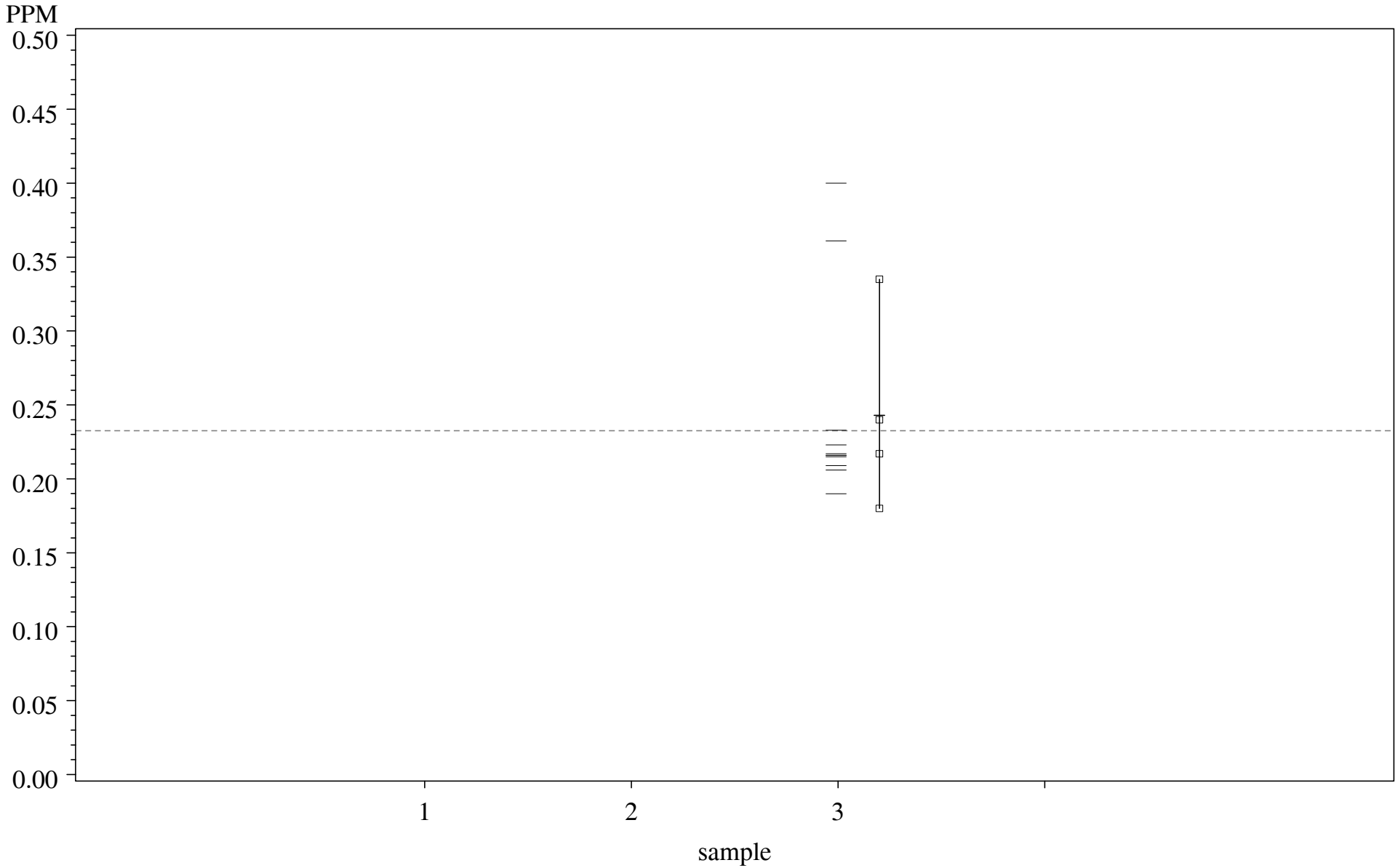
Test=Permethrin - total



Site's reported value (dot) compared with all other results
Assigned Value indicated by dashed horizontal reference line.
Reference Labs indicated by squares.

P01 Site: xxxxxx 2/10/2009

Test=Propoxur



Site's reported value (dot) compared with all other results
Assigned Value indicated by dashed horizontal reference line.
Reference Labs indicated by squares.

6.1 Appendix I

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P01 Pesticide Residue Instructions for Analysis

Enclosed is the AOAC Proficiency Evaluation Set #28 for P01. **Please note there are two samples for analysis and one blank.**

Each sample for this shipment is only to be analyzed for the specified types of pesticides indicated. Sample 1 continues to be a blank. Report incurred residues only for sample 1. Sample 2 is to be analyzed for pesticides listed as organochlorines, and organophosphates. N-methyl carbamates and other pesticides may be present, but are not to be reported for sample 2. Sample 3 is to be analyzed for only n-methyl carbamates. Other pesticides may be present, but should not be reported. Please follow these directions!

Do not report a value that is lower than your laboratory's detection limit.

The sample matrix is green beans. **Three** green bean samples are included, one blank and two spiked. The samples have been weighed out to 100 grams each. Please use this weight for calculations. Be sure to use quantitative analytical techniques to transfer material to any other container. Please note; the entire sample must be extracted and analyzed to obtain accurate spike levels. Refer to the enclosed pesticide list for possible spiked compounds. The samples may also contain incurred residues. The matrix is screened for incurred residues greater than 0.002 ppm from the list of pesticides. Only pesticides from this list should be included in the results. Please keep the samples frozen at -80 ^{O} Celsius until the time of extraction to reduce the possibility of breakdown. Once a sample is extracted, the extract must be analyzed in a timely manner.

Please treat these as any other samples and include appropriate controls, QC samples, and blanks, as you would in a regular sample set.

Email us at LPTP@aoac.org with any questions about this program, or if you have problems with your shipment. Thank you for your participation.

The shipping containers and artificial ice are used for one way shipping only and need not be returned.

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6.2 Appendix II

AOAC International Proficiency Testing

Table 2: QA Spike check and Homogeneity (ppm), AOAC Set #28

	Green beans # 2						Green beans # 2			
	Permethrins (total)	**Chlorpropham**	**DDT pp'**	**Azinphos methyl**	**Diazinon**	**Chlorpyrifos**	**Oxamyl**	**3-OH-carbofuran**	**Propoxur**	**Carbaryl**
	0.3444	**0.2329**	**0.4802**	**0.2740**	**0.6186**	**0.7088**	**0.2345**	**0.1903**	**0.2326**	**0.3860**
Replicate 1	0.3205	0.2475	0.4723	0.2890	0.6133	0.6898	0.2195	0.1893	0.2346	0.3897
Replicate 2	0.3188	0.2590	0.4696	0.2800	0.6116	0.6824	0.2252	0.1994	0.2601	0.3921
Replicate 3	0.3100	0.2463	0.4700	0.2769	0.6123	0.6780	0.1969	0.1696	0.2123	0.3586
Replicate 4	0.3189	0.2531	0.4949	0.2807	0.6192	0.6990	0.1968	0.1710	0.2094	0.3503
Mean	0.3170	0.2510	0.4770	0.2820	0.6140	0.6870	0.2100	0.1820	0.2290	0.3730
% Recovery	92	108	99	103	99	97	90	96	98	97
Std.Dev.	0.005	0.006	0.012	0.005	0.003	0.009	0.015	0.014	0.024	0.021
% CV	2	2	3	2	0	1	7	8	10	6
S. E. M.	0.003	0.003	0.006	0.003	0.002	0.005	0.008	0.007	0.012	0.011
Min.	0.310	0.246	0.470	0.277	0.612	0.678	0.197	0.170	0.209	0.350
Max.	0.321	0.259	0.495	0.289	0.619	0.699	0.225	0.199	0.260	0.392

Grand Mean % Recovery: **98**
Grand Mean % C.V.: **4**

Table 2

Final Page of Report