ESVE Veterinary Endocrinology External Quality Assessment Scheme
ESVE REPORT

Relaease Month:	May-13
Relaease Number:	002

Overall Commentary

General

This is the report of the second release of the ESVE EQA scheme. As was the case with the first release, it is important that we exercise caution in over-interpreting the results. The efforts made by the participants to report their results were much appreciated. We had participation for 26 separate physical locations (an increase of 24%!!) but the strength of a scheme such as this can only improve as more participants are recruited. Given the numbers of participants within individual methodologies it would still be difficult to draw strong conclusions from most of the data at this stage. However,

As was the case for the first release, it should be remembered also that assays that are more commonly used may not turn out to be the ones that yield the most accurate results so at least for now, we may have to recognise that some of the methods with the most "outlying" results may not be the methods that are "wrong".

It does not appear that participants had difficulty with the accuracy of reconstituting the freeze dried samples. A simplistic way to check for this yourself is to check if all your "SD Multiples" are consistently positive or consistently negative.

Please note that the Method numbers bear no relationship to one another across analytes. That is, for example, Immulite 1000, may be Method 1 for one analyte but Method 7 for another.

Once again, the range of values generated for Cortisol and Fructosamine was particularly surprising (see below) and we have further support for the possibility that some of the methods used for insulin do not work for dogs and cats.

We received a small number of participant submissions for FreeT4, Canine TLI, Testosterone and Oestradiol. The participant numbers were too small to analyse and present. However, depending on the content/species for the next release, it may be that we will request Free T4 and oestradiol from those labs that can access them as the correct analysis of both of these analytes is controversial.

Aldosterone

There are too few participants to draw strong conclusions. 4 of 5 participants generated very similar results using 3 methodologies. One was higher but the purposes for which Aldosterone is presently being used diagnostically would not be adversely affected by this range of results.

Canine TSH

The results generated for TSH are quite tight and despite this release being a feline sample all participants were able to generate a result above the limit of detection. Interestingly, one method (Method 3) generated a wider range of results than the other method. We did not see this degree of variation for this method on the canine sample in Release 001.

Cortisol

As was the case for Release 001, the range of results generated for cortisol was a real surprise. As a steroid, I would not expect difficulties relating to species differences between methods that we could expect from peptide assays. One method was excluded for generating a result that was too different from the others (421nmol/l) to be included in the statistical analyses

Fructosamine

The range of Fructosamine results was also a surprise. The variation in results is even greater than it was for the canine sample in Release 1. Two results were excluded for generating unphysiologically low results (<30umol/L). This requires further investigation as it was odd that the same phenomenon affected 2 participants. We have done some work rationalising the number of fructosamine methods but still have 10.

Insulin

As was the case with Release 1, there is 1 method that is not picking up insulin and 3 others that only detect a small proportion of the amount detected by several other methods. However, in only one of these labs is the feline insulin ref range lower than that used by the labs that are able to detect more.

Progesterone

Progesterone gave a wider range of results than I had expected. Again, I would have expected minimal matrix effects between methods for a steroid analysis.

Thyroxine

The benefit of a greater number of participants was lost a little on this release because the concentration was too close the upper reporting limit for the commonly used Siemens Canine T4 methods. The participants that reported a textual result (>193nmol/L) were excluded from the statistical analysis but as can be seen from those that could report a numeric result, it is likely that these excluded results were "correct".

Peter Graham, Program Co-ordinator

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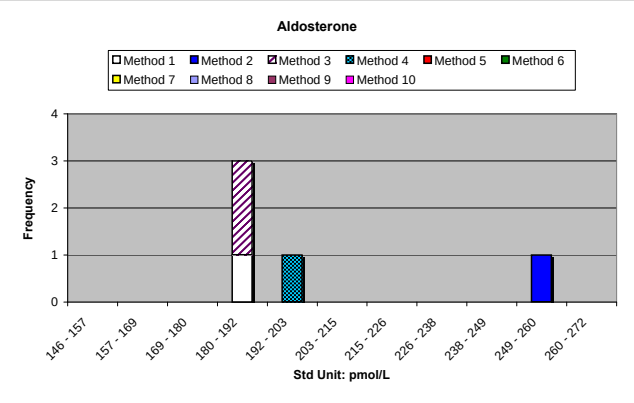
Aldosterone

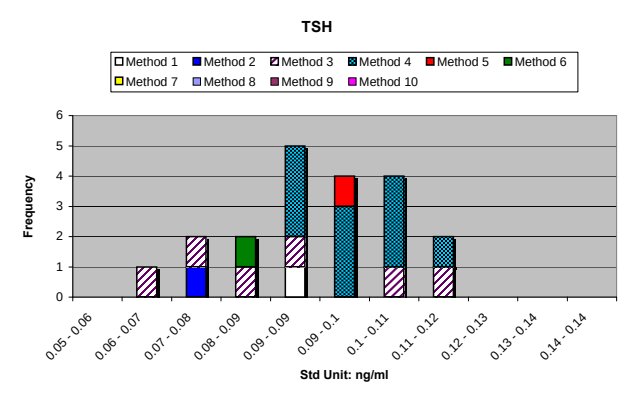
	n	Mean	StDev	%CV
Method 1	1	191		
Method 2	1	260		
Method 3	2	184	0	0.2
Method 4	1	196		
Method 5	0			
Method 6	0			
Method 7	0			
Method 8	0			
Method 9	0			
Method 10	0			
All Methods	**5**	**203**	**32.3**	**15.9**



Note:

Canine TSH

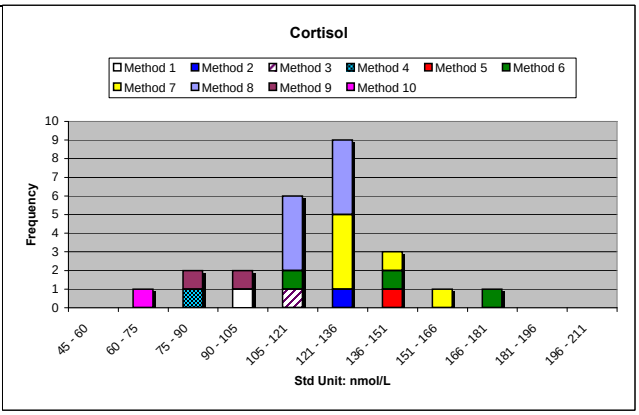
	n	Mean	StDev	%CV
Method 1	1	0.090		
Method 2	1	0.073		
Method 3	6	0.088	0.0216	24.5
Method 4	10	0.100	0.0086	8.6
Method 5	1	0.100		
Method 6	1	0.080		
Method 7	0			
Method 8	0			
Method 9	0			
Method 10	0			
All Methods	**20**	**0.090**	**0.0150**	**16.7**



Note: Methods 1 to 5 are different versions of a single manufacturer's
Method 6 reports in mU/ml not ng/ml. A conversion factor was not available. A raw result of 0.08 was included (lab's ref intrvl 0.04 to 0.44 for cats)

Cortisol

	n	Mean	StDev	%CV
Method 1	2	83	11.7	14.1
Method 2	1	123		
Method 3	1	119		
Method 4	1	83		
Method 5	1	144		
Method 6	3	144	30.0	20.8
Method 7	6	136	12.0	8.8
Method 8	8	118	7.2	6.1
Method 9	2	92	7.2	7.8
Method 10	1	74		
All Methods	**25**	**121**	**23**	**19.0**



Note: One cortisol result was excluded from the statistical analysis and presentation for being too extreme compared to other methods (421 nmol/L)

For statistical purposes, results lower than reportable limit have been converted to a value 0.5 x lowest reportable limit

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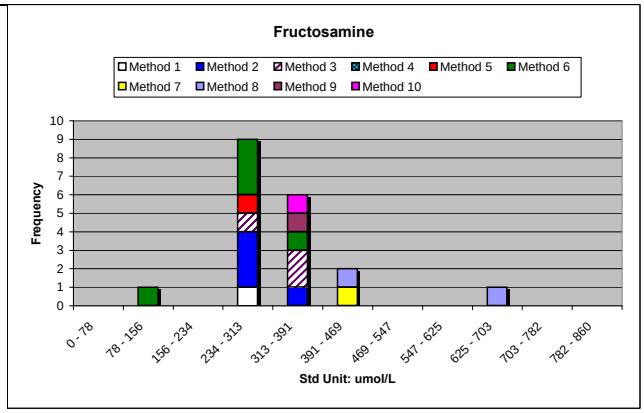
Fructosamine

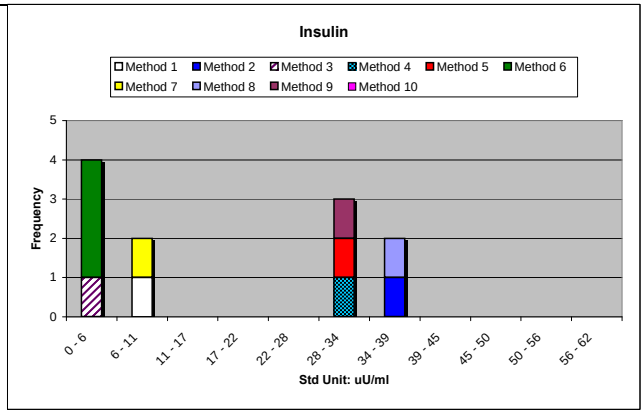
	n	Mean	StDev	%CV
Method 1	2	315	24.7	7.9
Method 2	4	288	54.1	18.8
Method 3	3	316	9.7	3.1
Method 4	0			
Method 5	1	301		
Method 6	5	240	78.1	32.6
Method 7	1	404		
Method 8	2	530	141.1	26.6
Method 9	1	315		
Method 10	1	332		
All Methods	**19**	**316**	**101.6**	**32.2**



Note: Two methods returned unexpected results <30umol/L and these have been excluded from statistical analysis and presentation

Insulin

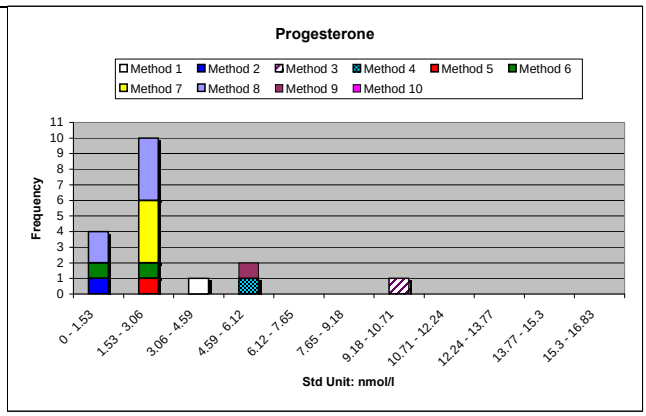
	n	Mean	StDev	%CV
Method 1	1	9		
Method 2	1	36		
Method 3	1	5		
Method 4	1	30		
Method 5	1	29		
Method 6	3	1	0.0	0.0
Method 7	1	10		
Method 8	1	38		
Method 9	1	31		
Method 10	0			
All Methods	**11**	**17**	**15.3**	**90.0**



Note: Three laboratories (same method) generated the textual result "<2" which was converted to "1" for statistical purposes.

Progesterone

	n	Mean	StDev	%CV
Method 1	1	4.39		
Method 2	1	1.40		
Method 3	1	10.20		
Method 4	2	2.70	3.823	141.4
Method 5	1	2.20		
Method 6	2	2.12	0.866	40.8
Method 7	4	1.99	0.358	18.0
Method 8	6	1.55	0.216	14.0
Method 9	1	5.09		
Method 10	0			
All Methods	**19**	**2.64**	**2.276**	**86.2**



Note:

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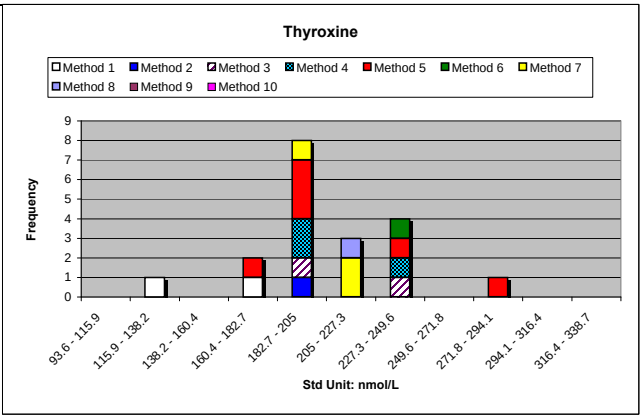
Thyroxine

	n	Mean	StDev	%CV
Method 1	4	187.5	48.73	26.0
Method 2	1	203.0		
Method 3	0			
Method 4	3	201.7	30.59	15.2
Method 5	6	209.9	37.63	17.9
Method 6	1	246.0		
Method 7	3	208.0	11.14	5.4
Method 8	1	207.6		
Method 9	0			
Method 10	0			
All Methods	**19**	**205**	**32.86**	**16.0**



Note: 27 laboratories participated. 8 generated the text result ">193 nmol/L" or ">15 ng/ml" which is the upper reporting limit of the Immulite Canine T4). The textual results were excluded from the statistical analysis

For statistical purposes, results lower than reportable limit have been converted to a value 0.5 x lowest reportable limit