ACID FAST BACILLUS

W.S. Wong, W.F. Cheung, H.S. Tang

A total of 16 survey slides were dispatched to participating laboratories in four quarterly survey exercises (four slides per quarter) in 2010. Participants were required to stain and examine for acid fast bacilli (AFB), and report the results and the staining method(s) to Hong Kong Institute of Medical Laboratory Sciences Quality Assurance Programme before the due dates.

Survey results returned by participating laboratories were analyzed. Scores of "two" and "zero" were assigned to correct and incorrect result or nil return, respectively. Survey reports were issued quarterly to the participating laboratories documenting the sample identities, intended results, reported results, scores and staining methods used. Nil return was marked on reports indicating no submission of survey results. False positivity and false negativity are considered as major errors. Year-end summaries of the total scores and the successful rate of individual laboratories in identifying the micro-organisms were compiled and released.

Table 1 shows the summary of control smears in year 2010.

Control smears	Total Numbers	Number of Correct Returns	Number of Incorrect Returns	Accuracy (%)
Overall total	528	526	1	99.8
Positive control	396	394	1	99.7*
Negative control	132	132	0	100

 * The statistics was duly adjusted to the nil return in year 2010.

Table 2 shows the break-down of control slides used in 2010.

Smear ID	Intended Result	Numbers Issued	Numbers of Correct Returns	Numbers of Incorrect Returns	Correct Returns (%)
X27	AFB Absent	66	66	0	100
X29	AFB Present	99	98	1	99.0
X30	AFB Absent	66	66	0	100
X31	AFB Present	151	151	0	100
X32	AFB Present	146	145	0	100*
	Overall total	528	526	1	99.8*
	Positive control	396	394	1	99.7*
	Negative control	132	132	0	100

 * The statistics was duly adjusted to the nil return in year 2010.

Table 3 shows the summary of participants' performance in year 2010.

Participants	n (%)
Number of participants completing four survey exercises	33
Number of participants with fully matched results	31 (93.9%)
Range of correct results derived from participants	94% - 100%

Table 4 shows the break-down of the performance of participants in year 2010.   All 33 participants returned four complete sets of survey results for analysis.

Participant	Expected Score	Observed Score	Correctness (%)
002	32	32	100
029	32	30	94
062	32	32	100
136	32	32	100
144	32	32	100
168	32	32	100
218	32	32	100
263	32	32	100
275	32	32	100
336	32	32	100
354	32	32	100
361	32	32	100
366	32	32	100
416	32	32	100
456	32	32	100
495	32	32	100
508	32	32	100
523	32	32	100
609	32	32	100
621	32	32	100
626	32	32	100
642	32	32	100
658	32	32	100
668	32	32	100
683	32	32	100
714	32	32	100
737	32	30	94
762	32	32	100
821	32	32	100
922	32	32	100
947	32	32	100
963	32	32	100
997	32	32	100

Table 5 shows the statistics of participants with respect to the staining methods in 2010.

Number of Participants	First	Second	Third	Fourth*
Fluorescence Staining only	2	2	2	2
ZN only	20	20	20	18
Fluorescence Staining and ZN	11	11	11	12

*One participant did not state the staining method used.

References:

1. Chadwick MC. Institute of Medical Laboratory Sciences Monographs: Mycobacteria. Wright PSG 1982;47-49

2. Kent PT, Kubica GP. Public Health Mycobacteriology. A guide for the level III laboratory. US Department of Health and Human Services, Public Health Service, Centers for Disease Control 1985;57-59.

- End -