Instructions

Test and evaluation of the Inlabtec Serial Diluter

Introduction

New equipment is typically tested and evaluated for their suitability before purchased and being introduced into the laboratory routine. The present instructions support interested laboratories to perform fast and objective testing of the Inlabtec Serial Diluter. For that, comparisons are carried out with the serial dilution technique used until now for the determination of total viable counts. Thereafter, the results and experiences can be assessed and provide a base for further decisions.

Test Phase Instructions

Day	Step	Target	Prodcedure
1	1	- Practice installation and use - Familiarize with the system - Check and verify Serial Diluter	- Set up the Serial Diluter in suitable place - Install tubing set, dispensing nozzle, 10 ml pipette and a bottle with water - Adjust dispensed volume to 9 ml and practice serial dilutions - Check and verify the 9 ml water dispensed (Operation Manual, Chapter 9)
	2	- Take Serial Diluter out of service - Prepare material needed for method comparison of the next days	- Dismount pipette, tubing set, dispensing nozzle and bottle. If NaCl solution, peptone etc. was used before rinse the system previously with water. For this purpose immerse the suction tube in water and dispense several times 9 ml water in a second vessel/ drain/ etc. - Autoclave tubing set, dispensing nozzle and diluent in bottles capped with the connector cap GL45 cpl. - Autoclave 1 ml LO pipette tips (if necessary) - If no sterile 10 ml serological pipettes in plastic available: Autoclave 10 ml glass pipettes
2	3	- Set up of Serial Diluter	- Install tubing set, dispensing nozzle, 10 ml pipette and diluent - Adjust to 9 ml dispensing volume
	4	- Perform sterility control to check whether the system is sterile before beginning the serial dilutions	- Insert Serial Dilution Bag and 1 ml LO pipette tip without sample, dispense 9 ml Diluent into the bag and remove 1 ml from the filled bag for plating as sterility control (Check Petri dish for colonies after incubation).
	5	- Perform method comparisons i.e. determine total viable counts of samples in parallel with the serial dilution technique used until now	- Use 5 to 10 samples - Always process individual sample with the two dilutions techniques one after another with no interruptions between (bacterial growths!)

	6	- Perform sterility control to check whether the system was correctly used and remained sterile	- At the end of the method comparisons, see step 4
	7	- Take Serial Diluter out of service - Prepare material needed for further method comparisons	- See step 2
3 and 4	8	- Same procedure as day 2	- See steps 3 to 7 - If necessary increase number of samples
5 to 7	9	- Evaluate method comparisons - Check sterility controls	- The bacterial counts of the same food sample determined with both methods should not differ by more than ± 0.5 log CFU (colony forming units). This overall variance in bacterial counts of food samples with the plate method is a widely accepted estimate based on the experience of proficiency tests (ring tests)

8	10	- Serial Diluter evaluation	- Summary of the results and experiences:
			  - Results method comparisons
			  - Assessment of: handling, process and workload reliefs, process security, cost and time savings, etc.

Available tools on http://www.inlabtec.com/website.php?id=/en/resourcen/download.htm

- Operation Manual, pdf
- Test report, xlsx
- Verification according to ISO 17025: Instructions, pdf; Verification template, xlsx

Time required for the test phase

Day 1 – 4: approx. 1.5 hours per day
Day 5 – 7: approx. 1 hour per day