Pour plate colony counting

Pour plate colony counting is an application commonly performed in the food, water, dairy, environmental, clinical, research and pharmaceutical laboratories worldwide. The ProtoCOL system provides automatic counting of bacteria on these types of plates.

Applications

Pour plate colony counting is commonly used in food laboratories and forms the basis of a standard test or QC methods. Bacteria such as Coliforms and entero's when plated on Violet Red Bile Agar (VRBA) or Violet Red Bile Glucose Agar (VRBGA) are routinely used in the food laboratories as an indicator of sanitary quality of foods and water.

Visualization

Plates are illuminated either from below or using reflected and/or transmitted light.

The ProtoCOL uses a unique combination of red, green and blue light to illuminate plates.

	Lighting	Background
Light colonies	Reflected light	Black
Dark colonies	Reflected light and illumination from below	White

Table 1 - Recommended lighting and background selection for counting colonies on the ProtoCOL system

N.B. If there is writing on the bottom of the plate then using a black background is preferable

Counting

If chromogenic agar has been used or coloured colonies are present then the ProtoCOL system can easily differentiate colonies according to their colour as shown in Figure 1. The ProtoCOL system can also differentiate colonies from any debris that may be present on the plate. Additionally, colonies can be classified by size and shape as illustrated in Figure 2.

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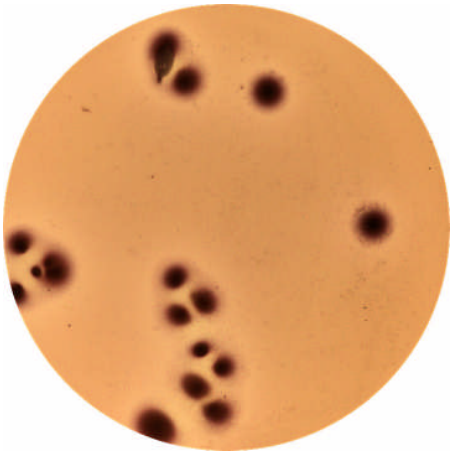

Figure 1 – Standard pour plate
Enterobacteria were plated on to VRBGA agar and incubated for 24hrs at 37^{0}C. This plate was imaged using reflected light and illumination from below on a white background.

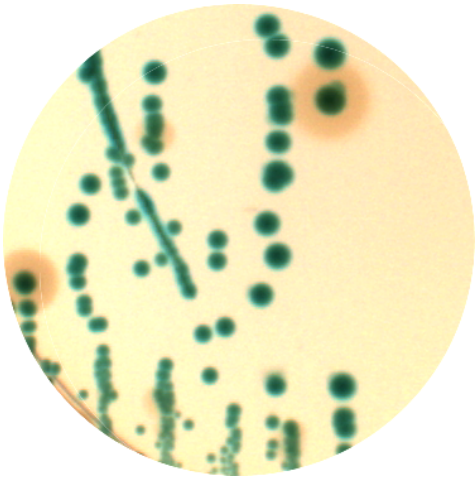

Figure 2– Colonies are classified by colour and size
E.coli bacteria were plated on to TBX agar and incubated for 24hrs at 44^{0}C. This plate was imaged using reflected light and illumination from below on a white background. This image clearly shows that both small and large colonies have been detected using ProtoCOL software.

11.07.09

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