Autoclavable plastic dip-slide

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Mackey and Sandys (1965) first described the dip-inoculum method as a means of culturing urine. Since then this convenient method has been confirmed by others as giving satisfactory results comparable to the pour-plate technique (Arneil et al., 1973). There are now many commercial brands of dip-slides available. The cost of each slide, however, is quite high. The Department of Pathology processed over 30,000 urine specimens in 1975. To use commercial preparations for all these urine samples would be prohibitive. We have, therefore, devised a dip-slide using autoclavable plastic, which has reduced the running cost considerably (figure).

Figure  Dip-slide made from autoclavable plastic

Methods and results

The cap was made from polypropylene, while the container and dip-slide were made from polycarbonate. The moulds and final products were made by a plastic firm.

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The sterile slides were laid on trays in a laminar flow cabinet. Cystine Lactose Electrolyte-Deficient medium was introduced on to the slides using an Oxford Automatic Dispenser. In spite of the precautions taken, the slides often became contaminated. The contamination rate was sometimes as high as 20% two weeks after preparation. We have now overcome this by subjecting the prepared slides in their containers to a temperature of 85°-90°C for 15 minutes in a hot air oven. The contamination rate is now less than 1%. There appears to be no adverse effect on the medium even after exposing the slides for 30 minutes at this temperature range.

One of the early problems encountered was the slipping of the medium from the slides. After two weeks, as many as 30% of the slides lost their medium. However, this was solved by increasing the concentration of the medium by approximately 10%. For each litre 40 g of the dehydrated medium, instead of the recommended 36.2 g, were used. Since then less than 1% of the slides have lost their medium after one month’s storage.

The dip-slides have been stored at 4°C for up to two months without any apparent loss in the capacity of the medium to support bacterial growth. These dip-slides have been in use for nine months, and the plastic materials have withstood the repeated washing and autoclaving well.

Comments

Our experience shows that it is feasible to make dip-slides from autoclavable plastic. This will reduce the cost of using dip-slides for urine cultures quite considerably. The initial outlay for the moulds and plastic products may be high. Even then, it was less than what we would have had to pay for one year’s supply of the commercial product. At present the cost of our dip-slides, excluding labour, is less than 1% of the commercial preparation.

References
