# Comparison of Copan WASP plating system and manual culture in streaking of urine specimens

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## Objectives

The Copan Walk Away Specimen Processor (WASP™) (Copan Italia, Brescia Italy) is an instrument for automated plating of microbiological specimens. The WASP™ system includes software that allows, e.g., the selection of various inoculation protocols and streaking patterns.

Here, we present the results of validation of WASP™ system versus manual culture in streaking of urine specimens.

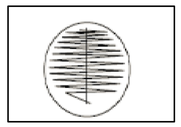
## Materials and methods

In a preliminary study, the optimal streaking pattern and speed of WASP™ system was assessed using 12 positive urine specimens, 1 µl loop, three different streaking patterns and two different streaking speeds (20 and 25 seconds).

Results were compared to those obtained by manual plating with 1 µl loop. All specimens were cultured on cysteine lactose electrolyte deficiency (CLED) agar.

Then, the most optimal setting (Single streak Type 2 streaking pattern with the 1 µl loop ) was prospectively compared to a conventional culture, for the detection of possible etiological agents in 203 clinical urine specimens.

### Copan WASP ™

Single streak Type 2
Using 1 µl loop

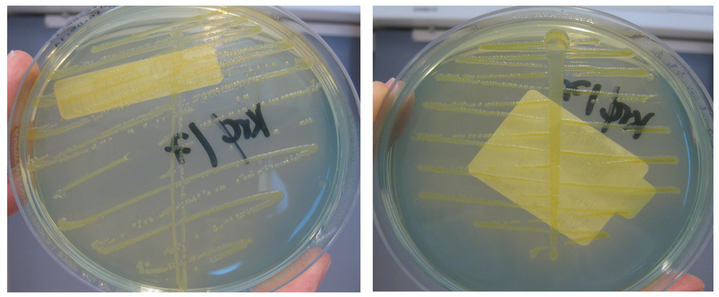


Figure 1. Results of manual (left) and automated cultures (right) on CLED agar at 24h of incubation. The specimen contains *Escherichia coli*.

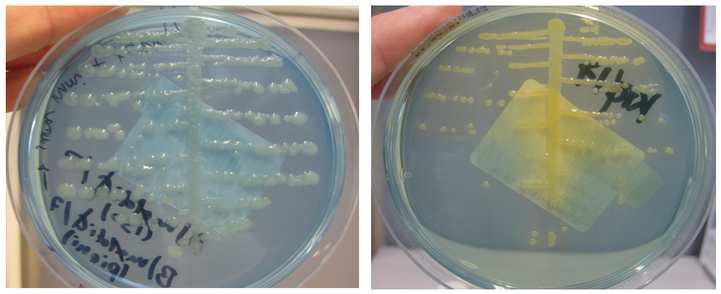


Figure 2. Bacterial growth on CLED at 24h of incubation. Both samples are cultured by the WASP ™ system.

## Results

With the WASP™ system, the most optimal streaking pattern of urine for quantitative colony counts was a pattern that streaked first a centre line and then streaks from side to side across the centre line.

Optimal speed with good reproducibility was 20 seconds per specimen. By these setting, colonies spread evenly trough out the plates and separate colonies were seen even from specimens containing mixed growth.

The WASP™ system provided identical results to all 203 clinical urine specimens, as compared to the manual culture.

With the WASP™ system slightly more colonies were seen from specimens containing scanty cell concentration, than with manual culture.

Slightly less separate colonies were seen from specimens containing a high concentration of slime producing gram-negative bacilli, than with manual culture.

## Conclusions

The Copan WASP ™ system proved to be a well performing specimen-processing instrument, providing high quality streaking patterns for microbiological cultures.

The separation of colonies from specimens containing mixed growth of various bacteria was nearly identical to the manual culture. Even the separation of slime producing bacteria was adequate, although some improvements would likely to be seen with different culture media not containing lactose.

The main advantage of the WASP ™ system, in our study, was that the labor demands in specimen processing were significantly reduced.

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