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INTRODUCTION:

Vancomycin-Resistant Enterococci (VRE) are an emerging cause of hospital-acquired infections. Improved isolation of Vancomycin-Resistant Enterococci (VRE) without loss of sensitivity and faster results turn-around-time (TAT) would significantly improve infection control of health care facilities. Copan is producing two liquid based microbiology (LBM) devices, the FecalSwab™ (FS) (a tube with 2ml of modified Cary Blair Medium plus a regular flocced swab) and the ESwab™ (ES) (a tube with 1ml Amies liquid Medium plus a regular flocced swab). These two LBM devices can be used for the collection of clinical specimens for the investigation of VRE using Chocolate agar, Tryptic Soy agar or VRE Chromagar culture on the COPAN WASPLAB™ automation.

OBJECTIVE:

Evaluate Copan FecalSwab™ and ESwab™ for the detection of Vancomycin-Resistant Enterococci in selective and non selective agar.

METHODS AND MATERIALS:

Resistant ATCC strains, 700221 resistant *E.faecium*, 700425 intermediate *E.gallinarum*, 29212 sensitive *E.faecalis*, 51299 highly resistant *E. faecalis* and 10231 contaminant *C. albicans* were used for the study.

Clinical stool specimens (N=72) already tested for VRE, used to prepare FecalSwab™ and ESwab™ samples, were also included in this validation.

FecalSwab™ and ESwab™ tubes not inoculated and inoculated with a known negative stool sample, were spiked with a countable (25-250 CFU) dilution of each ATCC strain; inoculums of 200ul for FecalSwab™ samples and 100ul for ESwab™ samples.

Both FecalSwab™ and ESwab™ with ATCC and clinical samples were plated in triplicate at 0 time, and after 24 hours in Chocolate agar, Tryptic Soy agar and VRE Chromagar plates using the 1ul, 10ul and 30ul loops on WASPLab™.

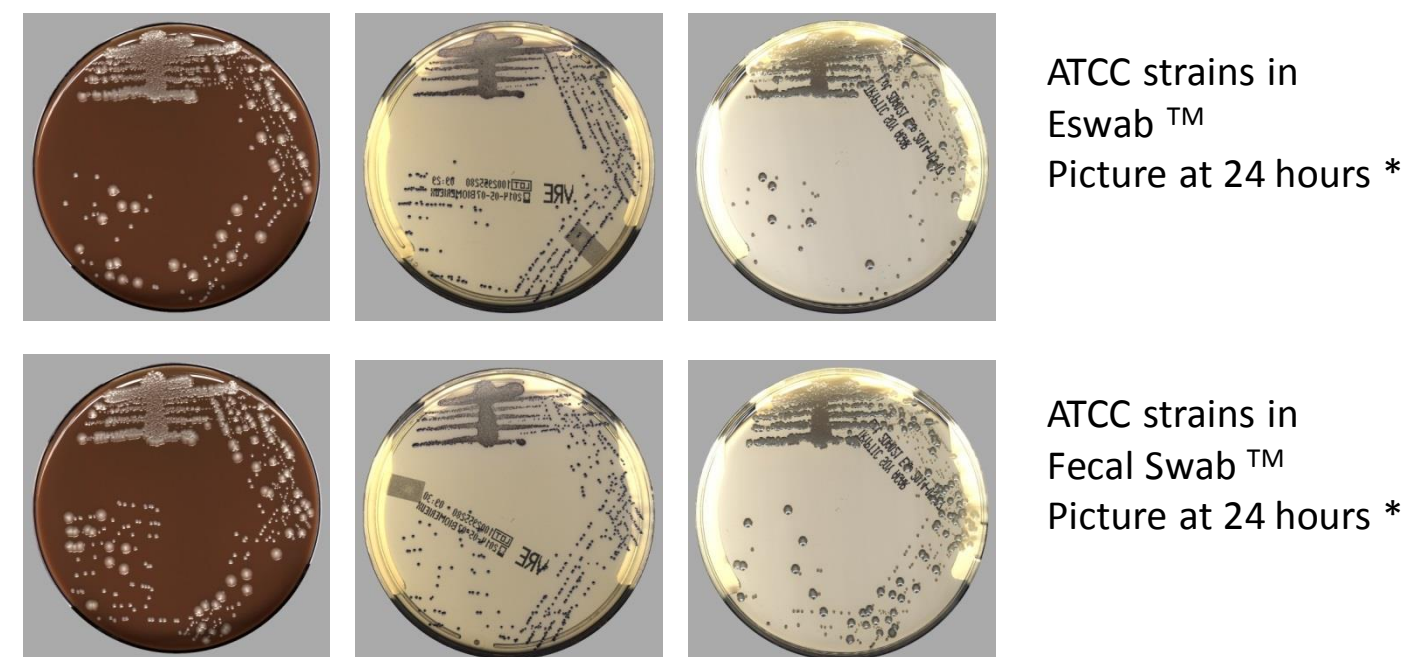
Plates were incubated at 35°C, and after 24 hours the CFU were identified and the results were recorded.



RESULTS:

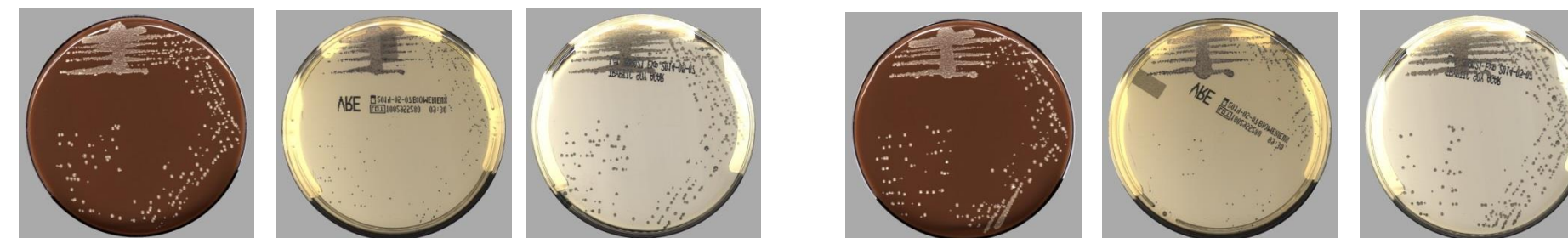
Clinical Samples (n=72)	<i>C.albicans</i> Contaminant	<i>G.gallinarum</i> Intermediate	<i>E.faecalis</i>	<i>E.faecium</i>
VRE Positive	0	0	42	27
VRE Negative	34	31	43	39
Total number of pathogens identified				216

Streaking and images performed by COPAN WASPLab™ automation



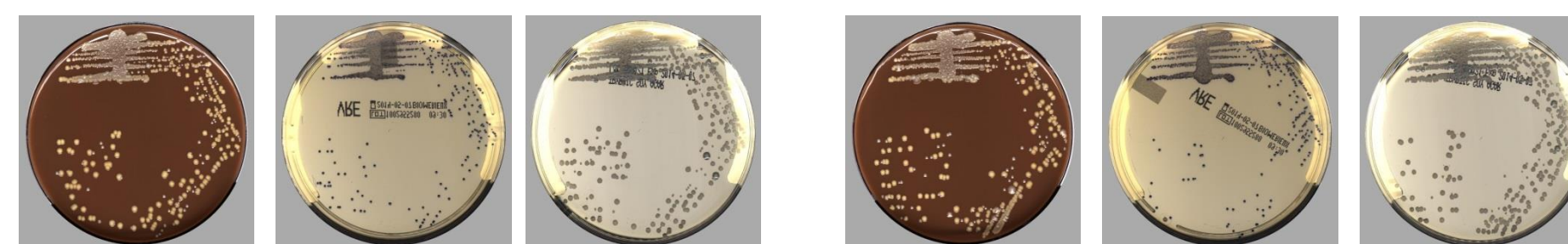
Clinical samples in Eswab™
Picture at 16 hours

Clinical samples in FecalSwab™
Picture at 16 hours



Clinical samples in Eswab™
Picture at 24 hours

Clinical samples in Eswab™
Picture at 24 hours



* Streaking of Eswab™ and FecalSwab™ samples were made after 24 hours storage at RT.

RESULTS DISCUSSION:

All the FecalSwab™ and ESwab™, without and with stool samples, spiked with resistant, sensitive, and contaminant ATCC strains grew in chocolate and in Tryptic Soy agar plates.

E. faecium, *E. gallinarum*, *E. faecalis* and *C. albicans* didn't grow in the VRE Chromagar; only the VRE *E. faecalis* and VRE *E. faecium* have countable colonies for all inoculation times and with the 1, 10 and 30 ul loop volumes.

Both FecalSwab™ and ESwab™ clinical samples grew in chocolate agar and Tryptic Soy agar plates, and 69/216 were positive in VRE Chromagar.

FecalSwab™ and ESwab™ culture plates images taken by the WASPLab™ at 16 hours were as good as the pictures taken at 24 hours.

Using isolated colonies, all clinical samples were identified with the Microgen ID chambers, a superior specification of Microgen® that guarantee an excellent differentiation of Enterococci spp. (Microgen® Bioproducts Ltd.).

The clinical strains isolated were identified as 34 *C.albicans*, 31 *E.gallinarum*, 85 *E.faecalis*, 66 *E.faecium*.

CONCLUSIONS:

Copan FecalSwab™ and ESwab™ collection devices are supporting the growth of Vancomycin Resistant Enterococci (VRE) when plated in VRE Chromagar, with all the inoculation volumes.

The VRE Chromagar detected only the VRE positive in FecalSwab™ and ESwab™ clinical specimens.

Specimens collected in Copan FecalSwab™ and ESwab™ and WASPLab culture plates images allows the detection of VRE at 16 hours.

Samples collected in both FecalSwab™ and ESwab™, plated in VRE Chromagar plates and identified with the Microgen ID chambers, can be used for the screening of VRE colonized patients.