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 flocked swab) and the ESwab™ (ES) (a tube with 1ml Ames liquid Medium plus a regular flocked 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.

METHODS AND MATERIALS:
Resistant ATCC strains, 700221 resistant E. faecium, 700425 intermediate E. gallinarum, 292112 sensitive E. faecalis, 31299 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:

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

Streaking and images performed by COPAN WASPLab® automation

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 volume loops.

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™ clinical samples were made 0 after 24 hours storage at RT. 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 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 WASLab 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.

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