Isolation of multidrug-resistant *Escherichia coli* O157 from goat caecal contents and carcasses in the Somali region of Ethiopia

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Background and objectives
Toxigenic *E. coli* are an important cause of gastroenteritis in developing countries. In Ethiopia, gastroenteritis due to foodborne disease is a leading cause of death. The objective of this study were to:

• assess the pre-slaughter (i.e. carriage status) of *E. coli* O157 in goats originating from the Somali region of Ethiopia

• assess the hygienic practices and level of carcass contamination with *E. coli* O157 during the slaughter of goats

• determine the antimicrobial susceptibility patterns of the isolates

The vast Somali region of Ethiopia is home to 4.4 million people and 3.1 million goats

Methods
• A cross-sectional study was conducted in 2014 at a large abattoir in the Somali region of Ethiopia.

• The samples were enriched in modified tryptone broth containing novobiocin and plated onto sorbitol MacConkey agar. Isolates were confirmed using the indole test and latex agglutination.

• Antimicrobial susceptibility testing was conducted using the disc diffusion method.

Conclusions
• We isolated multidrug-resistant *E. coli* O157 from goats from a remote pastoralist system where veterinary inputs are limited. This suggests that resistance may have been transferred to livestock from humans.

• This study highlights how poor hygiene and slaughter practice can result in contaminated meat, which is especially risky in Ethiopia because of the common practice of eating raw meat.

Sources

<table>
<thead>
<tr>
<th>Sources</th>
<th>Unit/sample</th>
<th>Number of samples tested</th>
<th>Serologically confirmed (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caecal content</td>
<td>10 g</td>
<td>93</td>
<td>2 (2.1%)</td>
</tr>
<tr>
<td>Carcass swab</td>
<td>400 cm²</td>
<td>93</td>
<td>3 (3.2 %)</td>
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<tr>
<td>Water</td>
<td>10 ml</td>
<td>14</td>
<td>1 (7.1%)</td>
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<tr>
<td>Workers’ hands</td>
<td>2 hands</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Knife</td>
<td>2 sides</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>235</td>
<td>6 (2.5%)</td>
</tr>
</tbody>
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