NVSL Salmonella Update

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Veterinary Services
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Salmonella Serotyping

- 13,103 isolates submitted in 2017
  - 5,479 Clinical
  - 5,489 Non-Clinical
  - 2,135 Research and other
- 5,481 from chicken/turkey sources
Isolates Received
2013-2017

[Bar chart showing isolates received from 2013 to 2017 for Total and Poultry categories.]

- Total isolates increased from 2013 to 2017.
- Poultry isolates also showed an increase over the same period.
## 5 Year Serotyping Summary

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Isolates</th>
<th>Total Clinical Isolates</th>
<th>Total Poultry Clinical Isolates</th>
<th>Total Non-Clinical Isolates</th>
<th>Total Poultry Non-Clinical Isolates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>15,209</td>
<td>5,516</td>
<td>601</td>
<td>6,753</td>
<td>4,688</td>
</tr>
<tr>
<td>2014</td>
<td>15,353</td>
<td>4,897</td>
<td>525</td>
<td>6,687</td>
<td>5,351</td>
</tr>
<tr>
<td>2015</td>
<td>13,880</td>
<td>4,976</td>
<td>498</td>
<td>6,396</td>
<td>5,038</td>
</tr>
<tr>
<td>2016</td>
<td>13,295</td>
<td>5,258</td>
<td>546</td>
<td>5,727</td>
<td>4,408</td>
</tr>
<tr>
<td>2017</td>
<td>13,103</td>
<td>5,479</td>
<td>679</td>
<td>5,489</td>
<td>4,802</td>
</tr>
</tbody>
</table>
# Most Common Serotypes – Chickens 2017

<table>
<thead>
<tr>
<th>Rank</th>
<th>Clinical</th>
<th>Non-Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Enteritidis</td>
<td>Kentucky</td>
</tr>
<tr>
<td>2</td>
<td>Typhimurium</td>
<td>Senftenberg</td>
</tr>
<tr>
<td>3</td>
<td>Kentucky</td>
<td>Mbandaka</td>
</tr>
<tr>
<td>4</td>
<td>Mbandaka</td>
<td>Enteritidis</td>
</tr>
<tr>
<td>5</td>
<td>Infantis</td>
<td>Worthington</td>
</tr>
</tbody>
</table>
**Salmonella Group D**

- Chicken submissions, clinical + non-clinical
- 435 Group D isolates
- 358 (82%) were SE
- Other 18%: Javiana, Berta, Ouakam
Top 5 Serovars Clinical Isolates from Chickens 2013-2017

- Enteritidis
- Kentucky
- Typhimurium
- Heidelberg
- Mbandaka
- Infantis
- Braenderup
- Senftenberg
- III 13,23:G,251-
Top 5 Serovars Non-Clinical Isolates from Chickens 2013-2017

Years observed

- Enteritidis
- Senftenberg
- Kentucky
- Mbandaka
- Worthington
- Braenderup
- Heidelberg
- Montevideo
- Thompson
### Most Common Serotypes – Turkeys 2017

<table>
<thead>
<tr>
<th>Rank</th>
<th>Clinical</th>
<th>Non-Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Senftenberg</td>
<td>London</td>
</tr>
<tr>
<td>2</td>
<td>Uganda</td>
<td>Senftenberg</td>
</tr>
<tr>
<td>3</td>
<td>Bredeney</td>
<td>Muenchen</td>
</tr>
<tr>
<td>4</td>
<td>Ouakam</td>
<td>Infantis</td>
</tr>
<tr>
<td>5</td>
<td>Typhimurium/</td>
<td>Hadar</td>
</tr>
<tr>
<td></td>
<td>Montevideo</td>
<td></td>
</tr>
</tbody>
</table>
Top 5 Serovars Clinical Isolates from Turkeys 2013-2017

Years observed

- Ouakam
- Sentfenberg
- Albany
- Breddeney
- Montevideo
- Typhimurium
- Heidelberg
- Uganda
- Muenchen
- I4[5], 12:i-
Top 5 Serovars Non-clinical Isolates from Turkeys 2013-2017

Years observed

Hadar
Senftenberg
Anatum
London
Muenster
Albany
Muenchen
Agona
Infantis
Uganda
Human outbreaks associated with Poultry 2013-2018

• Shell eggs
  – *Salmonella* ser. Braenderup
  – *Salmonella* ser. Oranienburg

• Various food products containing poultry meat
  – *Salmonella* ser. Typhimurium
  – *Salmonella* ser. Enteritidis
  – *Salmonella* ser. Heidelberg*
Human outbreaks associated with Poultry 2013-2018

- Outbreaks associated with live poultry
  - *Salmonella* ser. Braenderup (x2)
  - *Salmonella* ser. Enteritidis (x4)*
  - *Salmonella* ser. Indiana (x4)
  - *Salmonella* ser. Infantis (x5)
  - *Salmonella* ser. Hadar (x3)*
  - *Salmonella* ser. Lille
  - *Salmonella* ser. Litchfield (x2)
  - *Salmonella* ser. Mbandaka (x3)
  - *Salmonella* ser. Montevideo
  - *Salmonella* ser. Muenchen (x2)
  - *Salmonella* ser. Muenster*
  - *Salmonella* ser. Newport (x2)
  - *Salmonella* ser. Senftenberg
  - *Salmonella* ser. Typhimurium (x2)
  - *Salmonella* I 4,[5],12:i:-
VS Electronic 10-3 is Available

https://ncahappspub.aphis.usda.gov/NCAHPortal/auth/salmonellaSampleSubmission/create

- NCAH Portal is used for electronic sample submissions
- Create an eAuthentication account prior to access
- Once submission has been made & samples received at the NVSL, future submitter information will auto populate
- Additional email & fax numbers are easily added
- Ability to clone past submissions with similar data
- Reports remain in the system for one year
“Not Everyone got an A on the Test”
SALMONELLA SEROTYPING

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