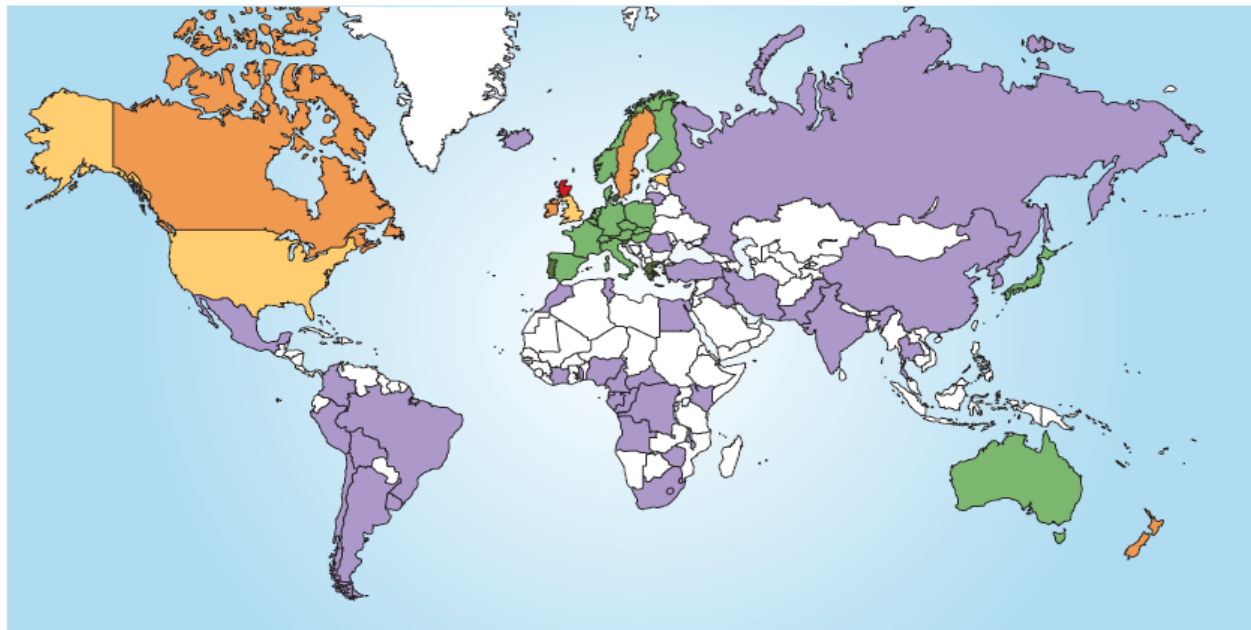


Towards a control program for VTEC O157 (and others?) in Swedish cattle

Anna Aspán



Incidence of *E. coli* O157

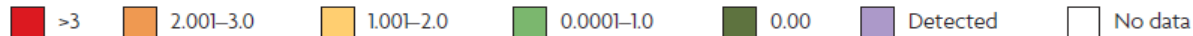


Figure 1 | **The worldwide burden of *Escherichia coli* O157.** Map of the worldwide relative burden of *E. coli* O157 in humans in 2005 per 100,000 individuals in the population. Crude rates are presented for countries where there are surveillance programmes⁷⁷⁻⁷⁹, although it should be noted that surveillance and detection methods differ and therefore direct comparisons of burden are problematic. Purple shading represents the detection of *E. coli* O157 in a country where no estimate of incidence rate is available. White is used to represent a country for which no data are available, but it should be noted that infections may have occurred in some of these countries, especially those without developed *E. coli* O157 surveillance systems. The figure reflects information from published reports up until 31 August 2008.

From Chase-Topping et al.,



Human infections

Preliminary data domestic cases 2012 (jan-sept)

VTEC strain cultured **114 (1.52)**

No strain cultured **57**

Total no of cases **171 (2.28)**

VTEC O157 used to dominate, but this year:

O26 30 26,3 %

O103 24 21,1 %

O157 19 16,7 %

O121 8 7,0 %

O191 5 4,4 %

etc



Ongoing study (one year)

- Samples from all reported clinical cases should be reanalysed at SMI if no strain was cultured at the regional laboratory
- Clinical data will be recorded in more detail



Number of "no strain obtained on culturing" should be substantially reduced.

What serotypes / pathotypes should be "controlled" in the Swedish food-chain?

And how?

Ongoing studies

- How to find tags for human pathogenic strains of different serotypes to use when screening ruminants
- How to sample for VTEC cost efficiently in cattle herds
- How does the on and between-farm dynamics for VTEC work over time
- How important is trade in between-farm epidemiology of VTEC
- How to eliminate pathogenic VTEC from farms
- How to best isolate relevant strains in the laboratory

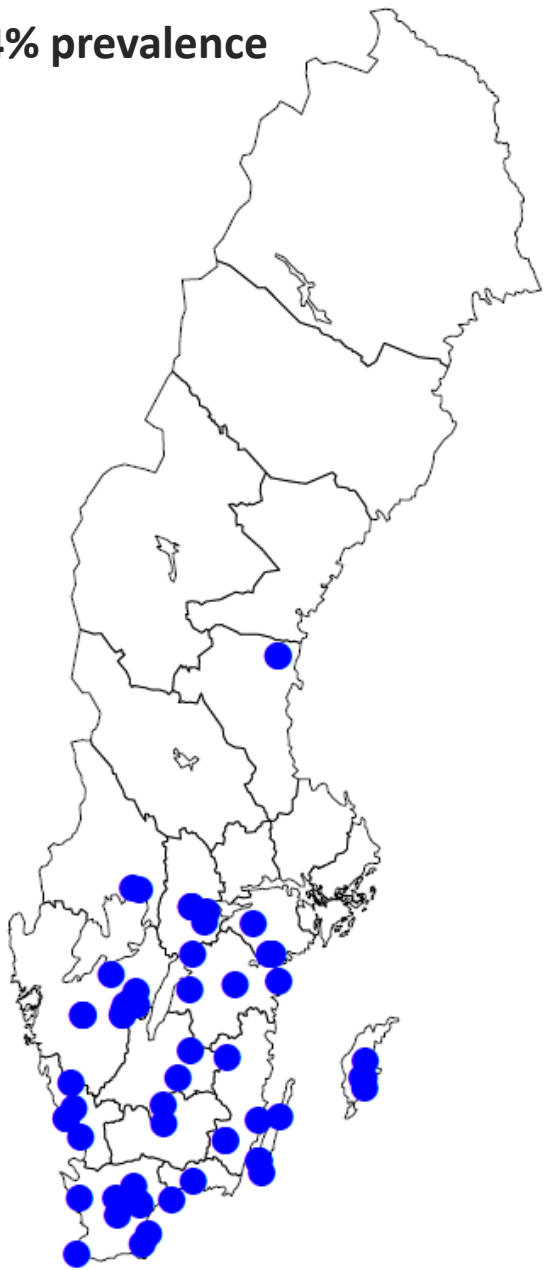
Some preliminary results:



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3.4% prevalence



2 500 samples from slaughterhouse prevalence study are currently screened by Q-PCR for relevant O and H types

- 6 hours pre-enrichment
- Plating – growth over night
- Q-PCR
- Positive samples will be subjected to IMS
- Isolated strains will be compared to strains that has caused disease in humans.

Samples from sheep will be screened next year (if funded)



Ongoing studies

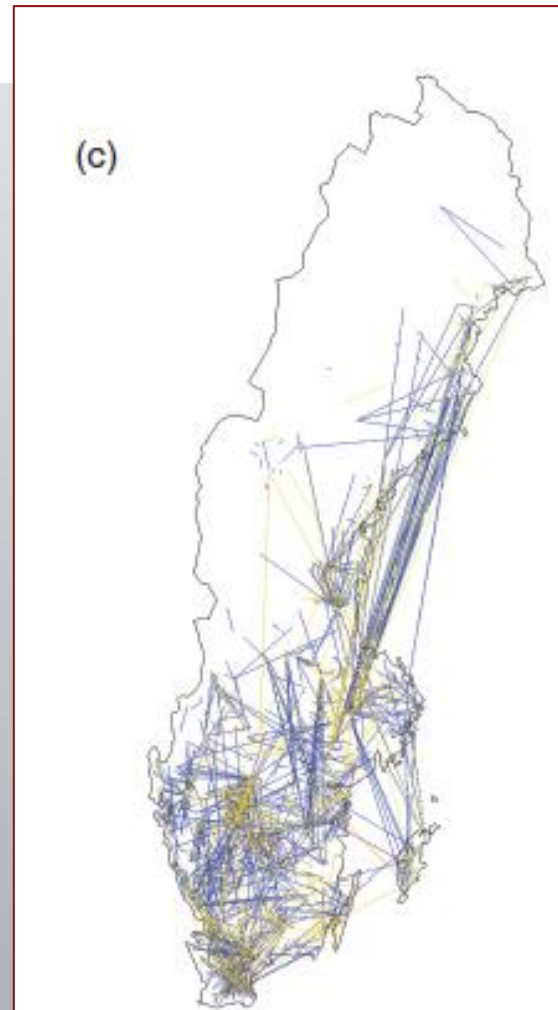
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Spatio-temporal evaluation of cattle trade in Sweden: description of a grid network visualization technique

Stefan Widgren¹, Jenny Frössling^{1,2}



Ongoing studies

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Interventions / no interventions did not make a difference,
Vaccine against O157 will be tested 2013

Ongoing studies

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- Robert Söderlund
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- Christine Källman
- Tomas Jinnerot
- Erik Eriksson
- Ann Lindberg

- Cecilia Jernberg
- Ingela Hedenström
- Cecilia Svensson
- Camilla Sundborger
- Sofie Ivarsson



The logo for the Swedish Institute for Communicable Disease Control (Smi) features the letters 'Smi' in a bold, black, sans-serif font. A small red dot is positioned above the 'i'. Below the letters, the words 'SMITTSKYDDSIINSTITUTET' are written in a smaller, black, sans-serif font.

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