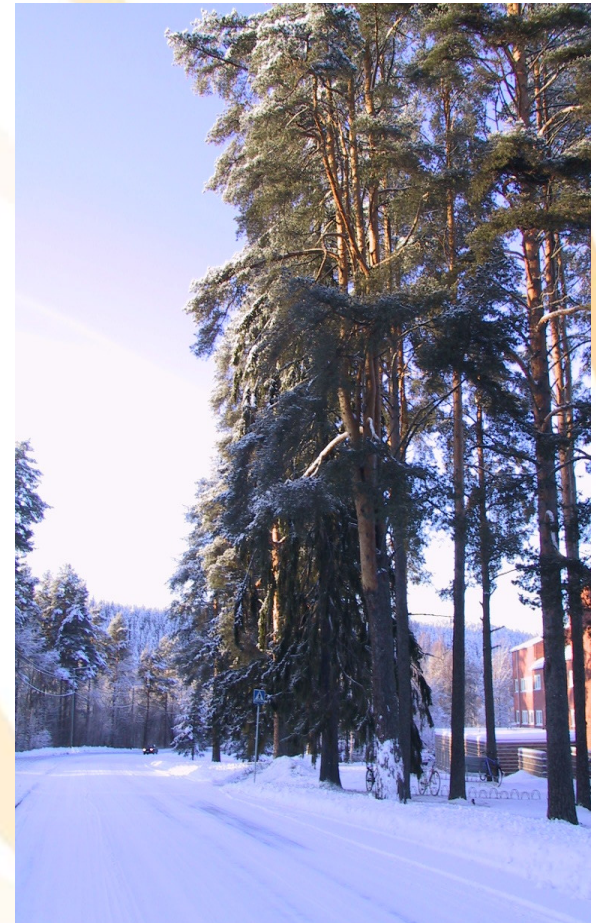


STEC diagnostics in Finland

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KUOPIO: non-O157 STEC

HELSINKI: O157-STE C

KTL: human isolates

STEC in humans in Finland

- The incidence of STEC in humans 0.2-0.9/100 000 during 1998-2004
- 1.0/100 000 in 1997 → O157:H7 outbreak
- Under-diagnosed ?
- Since 1998 majority of cases have been non-O157
- Most human cases are sporadic or family outbreaks
- Apprx. 90 % and 80 % of the O157 and non-O157 cases are of domestic origin, respectively
- O103:H2/H- 30 % (bloody diarrhea, diarrhea, asymptomatic)
- O145:H28/H- 14 % (HUS, bloody diarrhea, asymptomatic)
- O26:H11/H- 13 % (diarrhea, asymptomatic)

Methods

- **O157**: ISO 16654:2001; sample size 10 g and 6 h enrichment period
- **Non-O157**: 1 g of feces enriched overnight in 20 ml mTSB+ novobiocin
- A 10 µl loopful of the enrichment broth is cultured onto TBX agar
- Paton and Paton (JCM 2002) multiplex PCR from the area of confluent growth
- Sensitivity of the method (cattle faeces) 10^3 to 10^4 CFU/g
- If *stx* positive, mixed culture is frozen and subjected later to colony hybridization
- Isolates are *stx* subtyped: *stx*_{1c} (Zhang et al. 2002), *stx*_{1d} (Bürk et al. 2003), *stx*₂ (De Baets et al. 2004, we have included in the system the *stx*_{2g} (Leung et al. 2003) and *stx*_{2-NV206} (Bertin et al. 2001) restriction maps)
- *eae* typing (PCR) Blanco et al. (2004)
- O serotyping with 42 O antisera, H-serotyping with PCR-RFLP of the *fliC* gene in collaboration with KTL

STEC prevalence studies in animals in Finland

Animals	Age	Number of samples	Stx positive	%
Calf, diarrhea	0-3 mo	371	98	26
Calf, healthy	0-3 mo	197	65	33
Calf, multiple site production:				
at arrival	1-3 wk	235	63	27
2 weeks together	3-5 wk	209	132	63
6 weeks together	7-9 wk	118	72	61
Cattle in slaughter houses 1998		200	64	32
Cattle in abattoirs 2003; feces		537	162	30
Cattle in abattoirs 2003; carcass surface		536	57	11
Cattle in abattoirs 1997; O157		1350	17	1.3
Cattle in abattoirs 2003; O157		1450	6	0.4
Calves, beef cattle	5-8 mo	132	72	55
Reindeer		178	1	0.6
Elk and deer		960	97	10
Gulls, pigeons and broiler chickens		315	0	0