

UK Food and Mouth outbreak in 2001

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Examples FMD in the EU – emergency zones

- The main rule in the EU is check at origin
- In case of outbreak of infectious disease:
 - A protection zone of 3 km
 - Surveillance zone of 10 km.
 - Around that a region with special safeguard measures



Emergency Controls also in animal by-products legislation

- Article 24 and Reg (EC) 811/2003
 - Reference to OIE List A diseases which no longer exists.
 - Suggest keep to this list but current legal position?
 - Guidance note on Waste



Issues to consider



- Nature of the Disease –
- Species affected (if other disease e.g. TSE Risk?/Zoonotic?)
- Scale of outbreak
- Disposal Capacity
- Environmental Risks – Air and Water
- Biosecurity – Public and Animal Health

Issues to consider



- Transport & Logistics – including ID and Traceability (Commercial Docs)
- Public/Political/International perception
- Cost
- Legal constraints (including Environmental Legislation)
- Animal Welfare (culls from movement restriction +/- market collapse)

Minimising Risk



- Disposal Hierarchy
 - Incineration -> Rendering -> Landfill -> on-farm burial -> Air curtain incinerators -> pyres -> Mass Burial
 - Risk Assessment – Flow Chart of all possible pathways then detailed assessment to see which are the key ones
 - TSE Risks and increased environmental controls have made a major difference

Nature of FMD in UK 2001



- Pan-Asian O strain
- First clinical case in swine
- High affinity for sheep, clinically difficult to see in sheep
- At the moment of the first case in swine, 42 sheep farms were sub-clinically infected

Developments



- Import of (clean) Irish calves, which had contacts with (infected) British sheep from the UK on a resting point in France.
- Calves imported on a Dutch farm with calves and dairy goats on 24 February.
- First clinical signs in goats on 15 March
- first outbreak confirmed March 21, 2001

FMD UK 2001: Location of infected premises in Great Britain

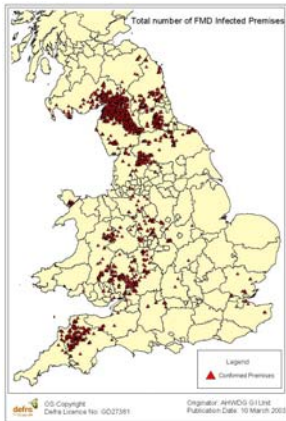
Total of 2,026 IPs

Widespread across GB, particularly on west side

Dispersion largely followed the seasonal sheep trade

Biggest cluster was Cumbria and Dumfries/Galloway, 1,069 IPs (>50%), related to Longtown Market

Biggest sheep market in Europe



UK Foot and Mouth 2001



- Animals Slaughtered for Disease Control:
 - Cattle 0.6 million
 - Sheep 3.3 million
 - Pigs 150,000
 - Plus 2.5 million welfare culls
 - At peak, disposing of 35,000 tonnes of carcasses per week from all sources

Methods of spread of FMD



- Well studied/documentated methods of spread
 - Animals directly to other animals
 - Vehicles which have carried infected
 - Air borne over short and substantial distances

Methods of spread of FMD - 2



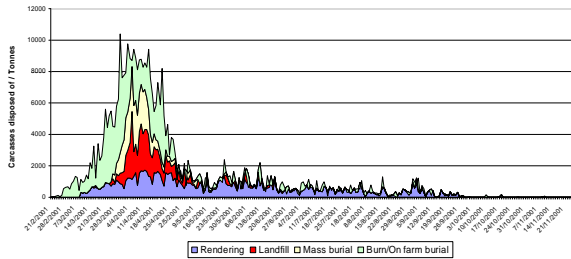
- Poorly studied/documentated methods of spread
 - Non-livestock vehicles moving between farms
 - Personnel
 - How does virus transfer from vehicles/personnel to livestock
 - Biosecurity measures
- However, in both 67/68 and 2001, 70-80% of all cases were attributed to "local spread" i.e. unidentified

Transport



- Major Logistical and Biosecurity Issue in large outbreak
 - Need for good quality transport
 - Rigorous leak testing & effective Cleansing and Disinfection
 - Use of "Traffic Master" to match capacity to need
 - Use of escort vehicles

Quantities of carcasses disposed via disposal routes during the FMD outbreak



Incineration & Rendering



- Safe end product (especially TSEs)
- Environmentally better; but
 - Limited capacity,
 - increased cost (incin), may not be local,
 - biosecurity issues, changes normal throughput to ?,
 - problems with whole carcasses

Landfill and (Mass) Burial



Need Environmental Risk Assessment

- Commercial Landfill – sites engineered to good standard but still high organic load (leachate); NIMBY problems
- Mass Burial – ID sites in advance – need to engineer and do Environmental Impact Assessment but can choose site
- On-farm burial – no movement but not engineered, so groundwater risk increased; not all farms suitable
- Main risk is to ground and surface water

Pyres and Air Curtains




Pyres

- Visually distressing and some air pollution inevitable
- Major public and international perception problems – potential PR disaster; but
- Can be very efficient (>99% protein destruction)
- No evidence of significant damage to health of local residents
- Exist as mobile facility, low capacity – in effect a sophisticated pyre


Contingency Planning



- Have a Plan!!
 - Plan for different diseases
 - Plan for worst case
 - Identify disposal sites - set up contracts and carry out environmental risk assessments in advance
 - Have a range of options
 - Liase with environmental services



First picture - site



Second picture - site



Third picture - site



Fourth picture
Preparation waste
water



Fifth picture
burning of
carcasses



Sixth picture
burning of
carcasses



Seventh picture
mobile incinerator



Eight picture
transport vehicle



Ninth picture
transport vehicle



Tenth picture
disinfection of
transport vehicle
