



Better Training for Safer Food *Initiative*

Eradication measures for TSEs

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European
Commission

Topics Covered

Eradication measures for TSEs

- **BSE in cattle**
- **BSE in small ruminants**
- **Scrapie in sheep and goats**
 - Classical Scrapie
 - Atypical Scrapie
- **Breeding Programmes**

Eradication of TSEs

- Eradication programme has been very successful for TSEs
- Decrease of BSE cases from 35,080 in 1993 to 18 cases in 2012
- Prevalence of Scrapie cases in ovines from 44.4 cases per 10,000 animals tested in 2002 to 10.9 cases in 2012
- Decrease in prevalence of Scrapie cases in caprines from 4.8 cases per 10,000 animals tested in 2002 to 2.5 cases in 2012

Eradication Measures

- *Eradication of BSE in bovines is different from the eradication of Scrapie in small ruminants*
 - **Epidemiology of the disease**
 - **Distribution of prions within the different organs in the carcass**

Legislation

Regulation (EC) 999/2001

- *Regulation (EU) 630/2013 (recent amendment)*
- *Articles 12 & 13*
- *Annex VII*
- *National legislation transposing the EU Regulation,*
 - **Statutory Instruments in IE**
- *Contingency Planning for BSE (Art 14)*
- *Contingency Planning for TSE in small ruminants (Art 14)*

Eradication Measures

Positive TSE cases generally as a result of

- **Clinical suspects on farm**
- **Clinical suspects at slaughterhouses**
- **Fallen animals tested**
- **Non negative rapid test results**

- Slaughterhouse
- Fallen animal

TSE/BSE Suspects

Current legal provisions: Article 12 of Regulation (EC) No. 999/2001

Clinical suspect definition (Article 3(h))

TSE/BSE clinical suspects reported by animal owner, veterinarian (PVP) on the farm or official veterinarian at the slaughterhouse carrying out the ante-mortem examination of the animal prior to slaughter

Suspicion of BSE in a diagnostic laboratory (Article 3(h))

TSE/BSE shall be suspected in a diagnostic laboratory in case of an inconclusive or positive result (also on re-examining the sample) obtained by the rapid post-mortem test for TSE/BSE (slaughtered animal or fallen stock)

TSE/BSE Suspects

Article 12, Regulation 999/2001

Any animal suspected of being infected by a TSE shall be either

- placed under an official movement restriction until the results of a clinical and epidemiological examination carried out by the competent authority are known, or killed for laboratory examination under official control
- ...If a BSE is **officially suspected** in bovine animal at a holding in a Member State, all other bovine animals at that holding shall be placed under an official movement restriction until the results are available
- ... If a TSE is **officially suspected** in an ovine or caprine animal at a holding in a Member State, all other ovine and caprine animals at that holding shall be placed under an official movement restriction until the results are available
- ...other holdings or only the holding of exposure shall be placed under official control depending on the epidemiological information available

TSE Suspect Measures

On farm measures on suspicion of TSE:

- Epidemiological investigation **at the holding where case is suspected,**
- measures instituted at other holdings, where applicable

Movement restrictions:

- Holding restricted; provisional ban on trade to and from the holding until results are known or animal no longer regarded as a suspect
- reporting of and submission of all eligible fallen stock at holding to the competent authority for TSE sampling

Milk and milk products derived from ovine and caprine animals at the holding placed under official control, and which have remained at the holding from the date of suspecting TSE and pending the confirmatory test results, shall only be used within that holding

Measures after official suspicion of BSE in bovines

• Measures at the slaughterhouse

• Measures at suspicion of BSE during the ante-mortem

- Official veterinarian at the slaughterhouse shall prohibit the slaughter of an animal clinically suspected of BSE. Suspect animal shall be killed outside of the food chain and tested to BSE

• Measures at suspicion of BSE by the rapid test

- The body, excluding the head, of the animal suspected of BSE by the rapid test shall be treated as ABP category 1 material (SRM). The head of suspect animal shall be submitted to the NRL for confirmatory testing.
- Carcass of the animal slaughtered immediately before the suspect animal and two subsequent slaughtered animal carcasses shall be detained – disposed as Category 1 material if BSE is confirmed. (slaughter plant may not have the facility to store the carcasses pending the confirmatory result)

TSE/BSE Confirmatory Results

Confirmation - NO:

- all the restriction measures, which have been instituted, are cancelled

Confirmation - YES:

- implementing of measures in accordance with Article 13 of Regulation 999/2001/EC and Annex VII to that Regulation

Measures after TSE confirmation in bovines

Legal basis: Article 13, Annex VII, Regulation (EC) No. 999/2001

- Restriction measures remain in place
- identifying all animals at risk and possible origin of disease
- disposal of all body parts from the affected animal in accordance with Animal by Products Regulation (excluding the materials required for the additional investigations) Regulation (EC) 1069/2009
- Record the case on the competent authority's data system; (AHCS)

Measures after BSE confirmation in bovines

- **Identifying all animals at risk**
- **The cohort' means a group of bovine animals including:**
 - (i) animals born in the same herd as the affected bovine animal, and within 12 months preceding or following the date of birth of the affected bovine animal; and
 - (ii) animals which at any time during the first year of their lives were reared together with the affected bovine animal during the first year of its life;
- **Progeny born within two years prior to, or after, the onset of the disease**

Measures after BSE confirmation in bovines

- **Inspection at the holding, full epidemiological investigation including identifying all the animals at risk and possible origin of the disease) i.e. cohorts and progeny**
- **Culling and disposing of all animals at risk (cohort, progeny born within the last two years) outside the food chain**
- **Derogations:**
 - not to kill the cohort if animals from the cohort did not have access to the same feed and
 - defer the killing – bulls ,
 - derogation for MS to kill the cohort at the end of productive life (DE, ES)
- **Compensations..**
- **Announcement of the case to competent authority, EU, OIE**
- **Measures at the slaughterhouse!!!**

Eradication of BSE in small ruminants

Killing and complete destruction of animals, embryos and ova

Milk and milk products derived from the animals to be destroyed which were present on the holding between the date of confirmation of the classical Scrapie case and the date of the complete destruction of the animals shall not be used for the feeding of ruminants, except for the feeding of ruminants on the holding

Eradication of classical Scrapie

- Scrapie now regarded as animal health disease although the risk to public health cannot be regarded as being totally non-existent
- Genetic resistance to Scrapie in sheep is known
- Classic scrapie can be obtained by ingesting contaminated feed
- Classic Scrapie can spread between animals, most probably at parturition time through infected foetal fluids
- Atypical Scrapie has little tendency for spreading, occurs sporadically, in individual animals and usually in older animals
- The eradication measures are different

Eradication of classical Scrapie

- *Regulation (EU) 630/2013*
 - **Amendment to Regulation (EC) 999/2001**

Measures after confirmation of Scrapie

- Identifying all animals at risk

- All other ovine and caprine animals on the holding
- Other holdings if deemed necessary following epidemiological investigation
- Parents and last progeny if a female animal

Conditions applying to a classical Scrapie Holding

***Where BSE and atypical scrapie has been excluded
Milk and milk products derived from animals on farm shall
only be***

- Fed to ruminant animals on that holding
- Disposed of outside of the food /feed chain as category 1 Animal By Product (ABP)

***Milk and milk products on the holding traded within that MS
shall only be used for the feeding of non –ruminant animals***

- Where no ruminant animals are kept
- The products are moved and labelled in accordance with the ABP Legislation

Eradication measures for classical Scrapie

3 options available depending on conditions on the holding

Option 1

- Full depopulation; Killing and complete destruction of all small ruminant animals on the holding. This is the only option for caprines

Option 2

- Limited depopulation; killing and complete destruction of susceptible animals

Option 3

- No depopulation

Eradication measures for classical Scrapie

Option1

Full depopulation, killing and complete destruction without delay of all animals, embryos and ovas on the holding

- Animals > 18 months of age shall be sampled and tested for TSEs (intensive programme of testing)
- Prion protein genotyping of all ovine animals on the holding up to a maximum of 50 animals

Derogation

Slaughter of all animals within the food chain without delay provided
All animals slaughtered for human consumption within the MS
Intensive programme of testing with negative results prior to using
carcass for food

Eradication measures for classical Scrapie

Exempt lambs and kids provided they are slaughtered under 3 months of age

Following the full depopulation the following shall apply to the holding

- Intensified testing programme
- Restriction of the type of animal that can be introduced onto the holding
 - Male ovine animals of the homozygous ARR genotype
 - Female animals carrying at least one ARR allele and no VRQ allele
 - Caprine animals following a complete cleansing and disinfection of the infected premises
 - Semen from Category 1 rams
 - Embryos carrying one ARR allele and no VRQ allele
- Movement of animals from the holding also restricted

Eradication measures for classical Scrapie

Option 2; Partial depopulation

The determination of the prion protein genotype of all ovine animals on the holding

Once genotyped the following genotypes are excluded from killing and disposal

- Breeding rams of the ARR/ARR (homozygous) Genotype
- Breeding ewes carrying at least on ARR allele and no VRQ allele
- Ovine animals carrying one ARR allele intended for human consumption
- Lambs and kids less than 3 months of age at the time of slaughter if the CA so decides

Eradication measures for classical Scrapie

- ***The genotyped animals > 18 months when being killed and disposed of are subjected to TSE sampling and testing***
- *Derogation*
- *Replace the killing and complete destruction by allowing them for slaughter for human consumption provided they are subjected to the intensified testing programme with negative results*

Conditions as before in option 1

Eradication measures for classical Scrapie

Option 3; No depopulation

CA may decide not to kill and completely destroy any of the animals identified in the holding if

- Difficult to find genotyped replacements of the specified genotype
- The frequency of the homozygous ARR allele within the breed is low
- Inbreeding cannot be avoided
- Deemed necessary by the CA following the reasoned consideration of all epidemiological factors

Eradication measures for classical Scrapie

- Complete records must be kept for each flock availing of option 3
- When additional classical scrapie cases found within the flock the situation should be re-assessed by the CA and changed if necessary
- All animals in the flock up to a maximum of 50 should be genotyped within 3 months of the confirmatory date

Eradication measures for Atypical Scrapie

- Less restrictive
- Intensified testing programme for a period of 2 years from the date of confirmation of the last Atypical case on the holding
- Should this programme identify a case of classical scrapie then the eradication measures for classical scrapie shall apply from that confirmatory date

Eradication measures for TSE

- If the infected animal with the TSE was introduced from another holding, then the CA may introduce eradication measures in that holding instead of, or as well as the holding on which the disease was identified
- Commonage land; decision for the CA depending on the epidemiological findings
- Where there is more than one flock on a single holding the CA may decide on how many of the flocks to apply eradication measures to again based on epidemiological factors

Eradication measures for classical Scrapie post killing or slaughtering

- Intensified testing programme
- Limited movement of animals onto the holding
- Limited movement of germinal products onto the holding
- Limited movement of animals off the holding

Eradication measures for classical Scrapie post killing or slaughtering

- Also lambs and kids may be moved off the holding to one other holding for fattening prior to slaughter provided the holding of destination
 - Contains no other ovine or caprine animals
 - the animals will be killed in the MS before the animals have reached 12 months of age

Movement restrictions shall apply

- Until homozygous ARR level has been achieved for the flock
- Or for 2 years from the date of depopulation for options 1 and 2
- Or in option 3 for a period of 2 years from the date of confirmation or the last classical scrapie case

Breeding Programmes

Objective

- To increase the genetic resistance of ovines on the holding against classical scrapie
- To attain homozygous ARR allele status of all ovines on the holding (gold plate status)

Breeding Programmes

General requirements

- Concentrate on flocks with animals of high genetic merit (pedigree flocks)
- The CA must keep a full database of
 - Identity of flock
 - Identity of individual animals (including gender)
 - breed of animals,
 - number of animals in flock
 - results of genotyped animals
- Uniform system of certification
 - Genotyping certificate for each animal genotyped in the participating flock
 - Genotyping certificate for breeding rams from flocks not participating in the breeding programme

Breeding Programmes

- Reliable system for the ID of animals, samples and results, i.e. a good traceability system with minimum human error
- Genotyping of animals from the participating flocks and breeding rams from non participating flocks
- CA to assist with the establishment of genetic bank of semen, embryos and ovas where appropriate
- May be a programme for each breed depending on the rarity of the breed, likelihood of inbreeding or the frequency of various alleles within the breed.

Breeding Programmes

Specific rules for the participating flocks

- All animals must be individually identified
- All breeding rams must be genotyped before breeding
- Any ram carrying a VRQ allele shall be slaughtered or castrated within 6 months of the genotype result
- Female animals with the VRQ allele must not be traded to another holding except for slaughter
- Only male animals certified under the breeding programme shall be used for breeding on the holding, also applies to semen donors.

Breeding Programmes

Framework for recognition of resistant status

- Resistance of the participating flock must be recognised
- Level 1; All animals within the flock are of the homozygous ARR genotype
- Level 2; All of the progeny within the flock are from breeding rams of the homozygous ARR genotype
- CA may grant other levels in the framework
- CA must carry out regular sampling to verify the flock level status both at the slaughterhouse and on the holding

Breeding Programmes

Derogations provided for

- MS availing of derogations must inform the commission
- **Breeding rams sampled and not from a participating flock**
 - Rams must be individually identified
 - Rams with the VRQ allele can only leave the holding for slaughter

Breeding Programmes

Reporting

- Commission must be notified by MS of national breeding programmes
- Report annually to the Commission on the breeding programmes by the 31st March



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• Thank you for your attention !



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