

SHEEP - SCRAPIE ERADICATION

Purpose

1. To update the Committee on the Welsh Assembly Government's plans for accelerating the control, reduction and eventual eradication of scrapie from sheep in Wales.

Background

2. Scrapie is a fatal and infectious disease of the nervous system of sheep. It has been endemic in Wales for at least two hundred years. It is one of the group of diseases called TSEs (Transmissible Spongiform Encephalopathies) that also includes bovine BSE and CJD. While there is no evidence that BSE has spread to the Welsh, or any other, sheep flock, the possibility cannot be discounted. Research has shown that under experimental conditions BSE can be transmitted to sheep. Tests are being carried out on the brains of scrapie cases to assess whether the disease is masking BSE. There is, as yet, no reliable live test that distinguishes between BSE and scrapie.

3. Scrapie is a notified disease and its incidence must be reported to the authorities. Reported scrapie cases are removed from flocks and withdrawn from the food chain. There are few reported cases of scrapie: between 1998 and the end of 2001, there were 238 confirmed cases in Wales and there have been 76 cases so far this year (up to 30 September 2002). There is, however, evidence of under reporting and a monitoring programme in abattoirs and fallen stock is ongoing.

4. EU and UK scientific and food safety experts have agreed on the importance of addressing the theoretical possibility that BSE might have transferred naturally to sheep by tackling susceptibility to all TSEs. Governments have been urged to prepare programmes to eradicate scrapie and breed in resistance to TSEs by removing the most vulnerable genetic types from breeding flocks.

5. The schedule **annexed** to this paper lists the various genetic combinations that appear in sheep. These genotypes carry a descending level of resistance to TSEs. At European, UK and Wales levels, scrapie eradication initiatives are being concentrated on testing to establish the genotypes of sheep, thus enabling breeders to take informed breeding decisions which contribute to breeding out susceptibility to the disease.

6. Meanwhile, the sheep industry in Wales will remain vulnerable in market terms unless action is taken to increase the resistance of the national flock.. Consequently, this is a key

priority for the industry, for public health and for rural Wales.

National Scrapie Plan

7. Work to eradicate scrapie is taking place at the Great Britain level under the National Scrapie Plan (NSP). The NSP has been developed by the agriculture departments of the devolved administrations of Great Britain with the aim of reducing and eventually eliminating scrapie from the national flock. Phase I of the Plan was launched in July 2001. This has resulted in about 59,000 animals in Welsh flocks being genotyped. Since its launch, the NSP has been extended to include non-registered pure-bred flocks as well as registered pedigree flocks and the scheme rules have been altered to encourage wider participation among hill breeds. A consultation exercise proposing extending the NSP to all flocks that have reported scrapie since 1998 is currently underway. The proposed Scrapie Flocks Scheme (SFS) would allow all flocks that have reported scrapie since 1998 to become members of the NSP. Susceptible animals in SFS flocks would not be allowed into the food chain.

8. So far, 1619 Welsh sheep breeders have become members of the NSP. While this is an encouraging start, it represents only 31% of those eligible. Considerable effort has been spent promoting the NSP and encouraging uptake. Assembly officials and others have played a significant part in this effort and this will continue. The relaxation of the rules governing use and retention of the semi-resistant rams identified as Type 3 animals should increase uptake among Welsh breeders.

9. The NSP is also working up a scheme to archive genotypes that might be lost by breeding out susceptibility to scrapie. Whereas these genotypes would be undesirable now because of their susceptibility to the disease, they may carry desirable characteristics that could be re-introduced into the breeding flock when a high level of scrapie resistance had been achieved.

European Initiatives

10. European Commission proposals relating to genotyping are being discussed at working group level. Most Member States seem now to accept the philosophy behind genotyping, although a number have detailed concerns about practical and timing issues.

11. The proposals currently under consideration by the TSEs Working Group set minimum requirements for a breeding programme, including slaughter or castration of rams with susceptible genotypes and breeding restrictions on susceptible ewes. The proposals would also require Member States to set a framework for recognising the TSE resistant status of flocks. They would apply to pure-bred registered flocks and to other flocks that Member States wish to see covered. In the UK, these could include the non-registered pure-bred sector. As currently formulated, the Commission's proposals are broadly in line with the National Scrapie Plan.

12. It is also likely that separate proposals for dealing with holdings affected by scrapie will be considered at the EU level.

Welsh Assembly Government Initiatives

13. Wales benefits from centrally allocated funding for the NSP, a large-scale programme with substantial public investment: £40 million allocated in 2002-03. But there are reasons why more action is needed. During the winter months of 2001-2002, a joint working group involving sheep sector representatives, academic experts and Assembly officials considered what more could be done to accelerate scrapie resistance in Wales. Modelling commissioned by the Assembly showed that the genetic structure of the Welsh hill flock makes it more susceptible than average to scrapie and that relying on the National Scrapie Plan alone would take too long to deliver a flock sufficiently resistant to respond to any change in the current assessment of human health risk.

14. The working group recommended that a separate Welsh initiative was required with the aim of securing semi-resistance in Welsh lambs going into the food chain within 10 years of starting; "semi-resistance" being defined as having at least one copy of the most resistant genotype, ARR.

15. Based on the working group's conclusions, under the heading of the Welsh Flock Improvement Scheme (WFIS) a programme of activities is being worked up to complement the NSP and accelerate the eradication of scrapie in Wales. The principal focus of WFIS is a programme of ewe genotyping building on the work done last year under the Welsh Ewe Genotyping Scheme (WEGS). Under WEGS, about 25,000 Welsh Sheep Strategy animals were genotyped and identified with an electronic ID device.

16. ARAD, therefore, is currently working with the National Scrapie Plan to develop a successor scheme to WEGS with the aim of genotyping around 500,000 ewes over the next three years. Over the period 2003-4 to 2005-6, £10.5m is available. The advantages of running WEGS II as a complementary scheme to NSP are that WEGS 2 will benefit from the general GB state aids cover for large-scale ewe genotyping; WEGS II tests will automatically be accredited under the NSP; and the Assembly budget will benefit from economies of scale by making the scheme integral to the NSP operation.

17. The main components of WEGS II will be:

- Free genotyping, blood testing and laboratory testing) of all replacement ewes in qualifying flocks (the scheme will be open only to NSP members although Welsh breeders can join the NSP and WEGS II at the same time)
- Open to all pedigree and pure-bred sheep breeders (like the ram genotyping scheme)
- Electronic ID for traceability of all animals tested (by bolus).

- Restrictions on breeding from the most susceptible genotypes.
- Breeding advice following testing.

18. We also hope to back-up WEGS II with an Artificial Insemination service run in tandem with the breeding advice and with a programme promoting the various avenues for breeding in scrapie-resistance that are now becoming available to sheep farmers. Details of these projects are also being worked through at present. There is a separate State Aids application relating solely to the Assembly AI service presently before the Commission.

19. A GB ewe genotyping scheme will run from November 2002 – April 2003 or until all surplus laboratory genotyping capacity has been used up. It will, therefore, be a short term one off programme and will differ from WEGS II in that farmers will have to pay for vets to blood test and there will be no electronic I/D of animals.

Recommendation

20. The Committee is invited to:

- note the details of the Assembly Government's plans to accelerate scrapie eradication in Wales.

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Annex

Genotypes and their resistance to Scrapie

Genotype	Degree of resistance/ susceptibility
ARR/ARR	Sheep that are genetically most resistant to scrapie.
ARR/AHQ ARR/ARH ARR/ARQ	Sheep that are genetically resistant to scrapie but will need careful selection when used for further breeding
ARQ/ARH ARQ/AHQ AHQ/AHQ ARH/ARH AHQ/ARH ARQ/ARQ	Sheep that have little genetic resistance to scrapie.
ARR/VRQ	Sheep that are genetically susceptible to scrapie.
AHQ/VRQ ARH/VRQ ARQ/VRQ VRQ/VRQ	Sheep that are highly susceptible to scrapie. Ideally ewes should not be used for breeding.