National Scrapie Plan for Great Britain

NSP 1 (Revised July 2006)
The National Scrapie Plan Administration Centre (NSPAC)

The National Scrapie Plan Administration Centre administers the National Scrapie Plan (NSP) within Great Britain on behalf of the Department for Environment, Food and Rural Affairs (Defra), the Scottish Executive Environment and Rural Affairs Department (SEERAD), and the Welsh Assembly Government, Department for Environment, Planning and Countryside (DEPC). NSPAC is part of the State Veterinary Service (SVS) which is an Executive Agency of Defra.

NSP Helpline

If having read this brochure you have questions about the NSP you can ring the NSP Helpline which will normally be available between 08:30 and 17:00 hrs Monday to Friday (excluding public holidays). A Welsh speaker is usually available, or will call you back.

0845 601 4858
Local rate call charges apply

Correspondence

Alternatively, you may write to:

NSPAC
SVS
Whittington Road
Worcester WR5 2SU

We shall endeavour to respond to your letter promptly, generally within five working days following receipt at our offices.

E-mail address

nspac@svs.gsi.gov.uk

NSP web-pages

These are regularly updated and can be found at: http://www.defra.gov.uk/nsp

Useful addresses and contacts

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NSP web-site

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nspac@svs.gsi.gov.uk

Agriculture and Rural Affairs Departments for Great Britain

If you have specific policy questions officials within the National Scrapie Plan branches of the Agriculture and Rural Affairs Departments for Great Britain can be contacted as follows:

National Scrapie Plan Branch
Department for Environment, Food and Rural Affairs (Defra)
Area 7/05
1a Page Street
London SW1P 4PQ
Tel: 020 7904 6315

National Scrapie Plan Branch
Scottish Executive Environment and Rural Affairs Department (SEERAD)
Room 358, Pentland House
47 Robb’s Loan
Edinburgh EH14 1TY
Tel: 0131 244 6413

Welsh Assembly Government,
Department for Environment, Planning and Countryside (DEPC)
Office of the Chief Veterinary Officer
Cathays Park
Cardiff CF10 3NQ
Tel: 029 2082 5996
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1 Introduction

1.1 This brochure provides an overview of the National Scrapie Plan (NSP) for Great Britain. It explains the purpose of the NSP and the various elements of the programme.

1.2 This brochure sets out the rules that apply to the Ram Genotyping Scheme for Purebred Flocks. Your commitments and obligations to us and our commitments and obligations to you are set out in more detail in the Contract Booklet (NSP 25) which we will send to you if you apply to join this scheme. The rules set out in your Contract will be binding.
2 Definitions

- The **owner** is the legal owner of the sheep flock.
- The **keeper** is the person registered with the Animal Health Divisional Office as the keeper of the flock.
- The **agent** is a person or organisation who is charged with managing the affairs of the flock and who may sign the Contract on behalf of the legal owner.
- A **flock** is a group of sheep, of one breed, that feed and are kept together.
- The **samplers** are members of the State Veterinary Service or others authorised to take blood samples on behalf of the NSP.
- The **NSP** is the National Scrapie Plan for Great Britain.
- **NSPAC** is the National Scrapie Plan Administration Centre, Worcester.

2.1 Further terms and abbreviations are described within the glossary at the back of this brochure.
3 About the National Scrapie Plan (NSP)

3.1 Aims of the NSP

3.1.1 Scrapie (and BSE) are part of a group of diseases known as Transmissible Spongiform Encephalopathies (TSEs). The aims of the NSP are to protect:

- animal health by reducing and eventually eradicating scrapie and;
- public health from the theoretical risk of BSE (if it is there and being masked by scrapie)

by increasing the levels of genetic resistance to TSEs in the national flock.

In achieving these aims, the NSP will take into consideration the desirability of preserving (insofar as is consistent with the protection of human health):

- The present bio-diversity of sheep breeds in Great Britain, particularly as represented by rare breeds;
- The economic viability of sheep farmers generally in Great Britain;

The general support of the sheep farming industry and of other stakeholders (in particular consumers) in Great Britain for the totality of the NSP.
3.2 What is the NSP?

3.2.1 The NSP is a long-term plan, which consists of a number of genotyping schemes and initiatives designed to reduce the prevalence of scrapie in the national sheep flock.

3.2.2 Following extensive consultation with industry stakeholders that occurred during the summer of 2000, the NSP was launched in July 2001.

3.2.3 The voluntary Ram Genotyping Scheme for Purebred Flocks will continue to be supplemented by further schemes and one-off initiatives targeting different parts of the sheep breeding industry. These further schemes and initiatives are launched following consultation with the sheep industry and are publicised at the time of the launch.

3.3 Why have an NSP?

3.3.1 Advice from independent experts on TSEs is that a long-term programme is necessary in order to be able to control and eliminate scrapie. Although there is no known link between scrapie and human disease, there are a number of good reasons for tackling scrapie in this way now:

- to protect against the acknowledged theoretical possibility that BSE might have infected some sheep through contaminated feed. Whilst there is currently no evidence that BSE has occurred naturally in sheep, this possibility cannot be ruled out and the NSP will help reduce the consequences of this risk;
- to improve animal health and support trade in British sheep and their products. Several countries (Netherlands, France and the USA) have or are in the process of setting up their own scrapie eradication programmes;
to improve reporting of scrapie which will lead to improvements in animal welfare.

3.3.2 The use of genetics to tackle scrapie has been recommended by the Spongiform Encephalopathy Advisory Committee (SEAC), the EU Commission’s Scientific Steering Committee and is endorsed by the Food Standards Agency. The Government continues to fund long-term research into the study of TSEs including scrapie. The NSP is kept under ongoing review in the light of scientific and other developments. Further information about these developments will be published from time to time.

Robotics being used to distribute blood from vacutainers.
4 Scrapie and the science behind the National Scrapie Plan

4.1 What is scrapie?

4.1.1 Scrapie is one of a number of TSEs and is a fatal brain disease of sheep and goats. It has been present in this country (and many others) for well over 200 years. There are many clinical signs and most affected animals show some of these many months or years after the animal has become infected. Most cases of scrapie occur in sheep between the ages of two and five years.

Scrapie has been a notifiable disease since 1993 with compulsory slaughter and compensation for suspects since 1998. By law every animal suspected of having scrapie must be reported to the local Animal Health Divisional Office (AHDO).

4.1.2 Scrapie is difficult to control because:

- the form of the infectious agent and its method of transmission are not yet fully understood;
- there is as yet no routine live test to determine the presence of scrapie;
- there is no cure for scrapie;
- the infectious agent is resistant to most disinfectants; and
- the infection can possibly be transmitted by sheep which do not show any symptoms.

4.1.3 Traditionally, the control of scrapie has involved selective culling and the prompt removal of afterbirth from lambing pens. Where scrapie is suspected, slaughter is compulsory and compensation paid under scrapie notification legislation. A free advisory booklet is available for anyone who wants to find out more about how to spot the disease and what to do if it is suspected.¹

4.2 The science behind the NSP

4.2.1 Studies of the genetics of sheep have shown it is possible to identify whether sheep are relatively resistant or susceptible to scrapie and TSEs by testing a blood, semen or tissue sample containing the animal’s DNA. This test is called the ‘PrP genotyping’ test and the result is known as the ‘PrP genotype’ of a sheep.

¹Tel: 08459 566000 – To order the advisory leaflet Scrapie – Advisory Notes for Farmers (PB9446). It can also be viewed on the Defra web-site at www.defra.gov.uk/animally/bse/othertses/scrapie/adv-note.pdf
4.2.2 PrP genotyping is not a test which indicates whether sheep are infected with scrapie. It merely indicates a sheep’s relative susceptibility if exposed to the disease agent.

4.2.3 Scrapie develops when the normal form of the Prion Protein (PrP) in a sheep’s brain converts to an abnormal form. The PrP gene, which produces this PrP protein, also influences a sheep’s resistance or susceptibility to scrapie. The sheep PrP gene has two copies (alleles), one derived from each parent. Each position (or codon) on the gene translates into one of the 256 amino acids that form the PrP protein. Scientists have identified three particular codons on the alleles that indicate relative TSE resistance or susceptibility. These codons are 136, 154 and 171 and based on variations of amino acids at these locations, five different scrapie related alleles in sheep have been identified as follows:

<table>
<thead>
<tr>
<th>136</th>
<th>154</th>
<th>171</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>A</td>
<td>H</td>
<td>Q</td>
</tr>
<tr>
<td>A</td>
<td>R</td>
<td>H</td>
</tr>
<tr>
<td>A</td>
<td>R</td>
<td>Q</td>
</tr>
<tr>
<td>V</td>
<td>R</td>
<td>Q</td>
</tr>
</tbody>
</table>

**Key:** Amino acids: A = alanine; H = histidine; Q = glutamine; R = arginine; and V = valine
4.2.4 It is the pairing of alleles inherited from both parents that determines the genotype of the sheep. Up to 15 known genotypes appear in sheep, although the prevalence and frequency of each genotype differs between each breed. The NSP focuses on the ARR allele because research suggests this is the most resistant to scrapie and experimental BSE. The NSP also concentrates on the VRQ allele because research has shown that this is the most susceptible to scrapie.

4.2.5 Table 1 shows the 15 known genotypes which occur in sheep and their relative resistance or susceptibility to scrapie.

**Table 1 – NSP Genotypes Table**

<table>
<thead>
<tr>
<th>Genotype result</th>
<th>Type</th>
<th>Degree of resistance/susceptibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARR/ARR</td>
<td>1</td>
<td>Sheep that are genetically most resistant to scrapie.</td>
</tr>
<tr>
<td>ARR/AHQ</td>
<td>2</td>
<td>Sheep that are genetically resistant to scrapie, but will need careful selection when used for further breeding.</td>
</tr>
<tr>
<td>ARR/ARH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARR/ARQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHQ/AHQ</td>
<td>3</td>
<td>Sheep that genetically have little resistance to scrapie and will need careful selection when used for further breeding.</td>
</tr>
<tr>
<td>AHQ/ARH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHQ/ARQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARH/ARH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARH/ARQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARQ/ARQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARR/VRQ</td>
<td>4</td>
<td>Sheep that are genetically susceptible to scrapie and should not be used for breeding unless in the context of a controlled breeding programme approved by NSPAC.</td>
</tr>
<tr>
<td>AHQ/VRQ</td>
<td>5</td>
<td>Sheep that are highly susceptible to scrapie and should not be used for breeding.</td>
</tr>
<tr>
<td>ARH/VRQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARQ/VRQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VRQ/VRQ</td>
<td></td>
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</tr>
</tbody>
</table>

This table is subject to continuous scientific review.

4.2.6 There is more than one form of the scrapie agent. The ARQ/ARQ genotype is susceptible to some forms of scrapie and so far has proven to be very susceptible to BSE in controlled experiments. The amount of genetic pressure that should be placed on the ARQ gene will be subject to regular scientific review.
4.2.7 It is recognised that it will take time to change the genetic make-up of the national flock. To this end, the NSP will initially concentrate on promoting the use of the ARR gene (the most resistant) and excluding the VRQ gene (the most susceptible) and allow the continued use of sheep with the AHQ, ARH and ARQ genes.

4.2.8 Current science indicates that as a result of the NSP, we should in due course, see a very significant reduction in the incidence of scrapie and eventually its disappearance from the national flock. It is therefore hoped that as many eligible sheep breeders as possible will want to play their part in the NSP.

4.2.9 The Genotype Predicting Method Chart shown below illustrates the principle of how genotypes can be predicted in progeny.

**Genotype Predicting Method Chart**

- The above combinations are the only possible outcomes for the ram and ewe genotypes used in this example.
- The same outcomes would be generated if the ram and ewe genotypes were reversed.
- This method can be used to work out the possible lamb genotypes from any ram and ewe genotype crossing.
- There is an equal chance of each of the four genotype outcomes occurring, but if two or more of the outcomes are the same, there is a greater chance of this being the result.
4.2.10 Use the grid below to see the possible genotype outcomes from crossing particular genotypes. Follow the genotypes from the ram and ewe sides; where they cross the possible genotypes are listed for each lamb (even from multiple births).

![Table 2 – NSP Genotype Calculator Grid]

**Table 2 – NSP Genotype Calculator Grid**

<table>
<thead>
<tr>
<th>Sex of Sheep</th>
<th>NSP ‘Type’</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genotype</td>
<td>ARR/ARR</td>
<td>ARR/ARQ</td>
<td></td>
</tr>
<tr>
<td>ARR/AHQ</td>
<td>ARR/ARR</td>
<td>ARR/AHQ</td>
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<td>ARR/ARH</td>
<td>ARR/ARR</td>
<td>ARR/ARH</td>
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<td>ARR/ARQ</td>
<td>ARR/ARR</td>
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<td>ARR/ARQ</td>
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<td>AHQ/ARQ</td>
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<td>VRQ/VRQ</td>
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<td>ARR/ARQ</td>
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Key to box size:

- AAA/AAA = 100% chance
- AAA/AAA = 50% chance
## NSP Rams

### 3

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<th>AHQ/AHQ</th>
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**AAA/AAA = 25% chance**
4.3 Research project (SE0236)

4.3.1 Breeding for resistance to scrapie has raised the issue of how this selection process might adversely affect important sheep production traits. With the importance of biodiversity in mind, a large research project is underway, with the involvement of flock owners, to:

- Evaluate the impact that scrapie genotype selection might have on the national flock, and
- Advise on breeding strategies for scrapie resistance.

4.3.2 This research project is being overseen by an independent steering group, which includes a wide range of representatives from the sheep industry and the final report is expected early in 2008. All the main findings from the project will be made available to the sheep industry when the project is completed.

4.4 Rare breeds

4.4.1 During 2002, the Rare Breeds Genotype Survey was undertaken. The survey was commissioned by Defra in association with the Rare Breeds Survival Trust and its aim was to assess the genetic resistance or susceptibility to scrapie of breeds represented by the Trust. More information is available from the leaflet Scrapie Genotypes in Rare Sheep Breeds which can be obtained from NSPAC or the NSP web-site. The results indicated that some rare breeds could be lost to farming and will be considered differently from the more established breeds in all NSP schemes.

4.5 Atypical scrapie

4.5.1 Atypical scrapie is a type of TSE, which appears to belong to the same group of diseases as BSE, Creutzfeldt-Jakob Disease (CJD) and classical scrapie. In Great Britain atypical scrapie cases were first detected in 2002 through the active surveillance programme where brain samples from sheep and goats sent for slaughter and from fallen stock are tested for the presence of a TSE.

4.5.2 Further investigations have revealed that the samples give very distinct results that are different from both classical scrapie and experimental BSE in sheep, using the current diagnostic methods.

4.5.3 Unlike classical scrapie and experimental BSE in sheep, the atypical cases of scrapie tend to occur in sheep carrying the genotypes considered to be more resistant to scrapie, including the ARR/ARR genotype.
4.5.4 Great Britain is not the only country to have reported atypical cases of scrapie and it has been reported in a number of European countries (including France, Germany, Ireland, Norway, Portugal, Italy and Spain) with one case being reported from the Falkland Islands. Although it has not been found to occur in goats in this country, a number of European countries have reported atypical scrapie occurring within their goat populations.

4.5.5 To try and find out more about the atypical cases of scrapie, Defra has put in place a programme of research and have initiated an epidemiological study to investigate the flocks where these cases appear to originate. Flocks will not be subject to the control measures of the Compulsory Scrapie Flocks Scheme (see page 31). For more information on atypical scrapie please see the NSP web-site.
5 Ram Genotyping Scheme for Purebred Flocks

5.1 Introduction
5.1.1 This section lists rules that apply to the Ram Genotyping Scheme for Purebred Flocks. It should be read in conjunction with the terms and conditions contained in any Contract you may be sent upon applying to join this scheme.

5.2 Eligibility
5.2.1 This scheme is open to owners of purebred breeding flocks.

5.2.2 Flocks and owner or agent must be resident in Great Britain.

5.3 Application procedure
5.3.1 To apply to join this scheme, you must complete an Application Form (NSP 24). A separate Application Form must be submitted for each breeding flock. Forms will be processed on a first come, first served basis.

5.3.2 You can request a form from NSPAC or it can be completed over the phone. Alternatively you may wish to download an Application Form (NSP 24) from the NSP website, complete it and post it to NSPAC. Contact details for NSPAC are on the inside front cover of this brochure. This completed form gives us details of the owner, agent and/or keeper of the flock, whether you are already a member of the NSP; the keeper’s CPH (holding) number and when the flock could be made available for blood sampling.

5.3.3 We will try to arrange testing during the times you request wherever possible, although it will depend on the availability of our samplers and the number of tests our genotyping laboratories can handle at any particular time.
5.3.4 Please note that we cannot undertake a sampling visit to premises where restrictions are in place because of statutory disease control. In such circumstances, you should still submit your application explaining the circumstances of the restrictions. We will endeavour to make arrangements to visit your farm as soon as possible after the restrictions are lifted.

5.4 Number of sheep to be tested

5.4.1 All adult (stock) rams in the flock plus any male progeny that are to be used for breeding within a flock will be tested. A proportion of ram lambs born that year for sale as breeding rams and/or shearling rams born the previous year that will go for sale as breeding rams will also then be tested. If this does not meet the minimum number of animals for a cost-effective visit (currently 40), you may select a number of additional ram lambs or shearling rams and/or adult females or ewe lambs from your breeding flock to bring the figure up to the minimum number. 

If you have less than 40 animals we will normally test the entire flock.

5.4.2 For most flocks, the number of progeny to be tested will be equal to the number of rams sold for tup breeding the previous year plus a percentage rounded up to the nearest whole number. Owners may be asked to produce documentary evidence to support the number of male progeny they have sold the previous year.
5.4.3 Where documentary evidence is not available or if the number of progeny sold is unusually low during the year in question, or in the case of a new flock, the number of progeny to be tested will be based on the flock profile. At the time of the farm visit the samplers may ask to verify the number of breeding ewes by checking the flock movement book.

5.5 **Contract**

5.5.1 An NSP Contract will be issued to the flock owner or a nominated agent once the completed Application Form has been processed. The Contract consists of a Contract Agreement, which you must sign, the Contract Booklet containing all the terms and conditions of the NSP, and the Contract Schedule containing the number of sheep to be tested and when this will happen.

5.5.2 We will send you two copies of the Contract, both of which you will be required to sign and return promptly to NSPAC. On receipt of these copies, NSPAC will sign the Contract Agreement and one copy will be returned to you as confirmation that a visit has been scheduled. Your local Animal Health Divisional Office will be in touch nearer the time to agree the precise date and time for the farm visit. The Contract will provide for three testing visits, usually over a period of three years. The agreed number of sheep to be tested each visit and the week during which sampling is to be undertaken will be shown in the Contract Schedule.

5.5.3 Please note that by signing the Contract Agreement you agree not to use any non-certified rams (or semen) within your NSP breeding flock.

5.6 **The sampling visit**

5.6.1 You are responsible for ensuring that all of the sheep to be tested are gathered into a suitable handling facility on the agreed date of the farm visit and that sufficient help is available to ensure that the blood testing can take place efficiently and effectively. The visit may be rescheduled or cancelled if you do not comply with this requirement.

5.6.2 The sampler will have available a copy of the NSP Blood Sampling Protocol. This sets out the procedures to be followed by you and the sampler when blood samples are taken and the identity of each animal selected is recorded. You or a representative must be present during the farm visit to oversee the procedures and to ensure they are carried out correctly. We shall ask for your signature on the sampler’s Job Sheet to this effect.
5.6.3 During the blood sampling visit the sampler will administer an Electronic Identification (EID) device to each sheep entering the scheme. The EID device will normally be in the form of a ruminal bolus, which is given orally and lodges in the rumen of the animal. The EID device uniquely identifies the sheep and the EID number will appear on the Genotype Certificate (see page 22) with the result of the genotype test. The blood samplers will have EID readers and will check that the EID device is working before and after it has been administered. EID readers will also be made available to breed societies and to officials at markets and sales so that a sheep’s identity can be checked at the time of its sale.

5.6.4 To assist with your own management of the flock, the sampler will record any ear tag number, tattoo, or mark that you may use to identify a particular animal during the farm visit. Such identification must be in place before the farm visit and must be clear and legible. Where individual animals have names you wish to appear on the Certificate, you may ask for these to be recorded instead of, or in addition to, any ear tag, tattoo or mark. However, there is a limit to the number of characters that can appear on your Certificate. You will be asked to verify that your identification has been correctly recorded against the EID number of each animal. Your identification will appear alongside the EID number on the Certificate, although under the NSP only the EID number will be proof of the animal’s identity.
5.6.5 You are encouraged to keep your own accurate records of your sheep to ensure that you can correctly identify them on any future occasion.

5.6.6 No ram can be used in an NSP flock without an approved EID device having been administered and a genotype result confirmed. The EID device must not be tampered with or removed. You must contact NSPAC if you suspect that the EID has stopped working or has been ejected. Boluses that have been ejected should not be re-administered in any circumstances. In such a situation, NSPAC must be contacted to arrange a re-bolus and re-sample visit.

5.6.7 If any of your sheep already carry an EID bolus, we will accept this as its unique identification provided the technology is compatible with the NSP EID system. If not, the sampler will administer an additional NSP EID device.

5.6.8 Please note that all sheep entered under the scheme will be blood tested, even if you have a private genotype certificate/result. This procedure does not imply that any private genotype results are inaccurate, but enables us to guarantee the link (audit trail) between the animal, EID and the blood sample. You should ask the sampler to record any private genotype result for your sheep alongside its identity on the sampling visit documentation.
5.7 Additional sampling

5.7.1 In addition to your contracted sample numbers, we shall also endeavour to test any new breeding rams you buy during the year as testing opportunities arise, subject to the availability of resources.

5.7.2 Please note that once you have joined the scheme, you must not use non-NSP certified rams (or semen) for breeding within your NSP flock(s).

5.8 Genotype Results Summary

See below for an example of a Genotype Results Summary (NSP 11)

---

### Genotype Results Summary

**Owner/Agent:** Mrs ABC Jones

**Breed:** Derbyshire Gritstone

**Breed Society:** Derbyshire Gritstone Sheep Breeders' Society

**NSP Flock membership No:** 1000000

**Scheme:** NSP Ram Genotyping Scheme

The results below are for blood samples collected during the farm visit on the 24-Jun-2005.

Samples for which we are still awaiting results are listed after the results summary along with the reasons for the delay. We are trying to resolve these as quickly as possible and will send you the results as soon as they become available.

<table>
<thead>
<tr>
<th>NSP EID NO/SAMPLE NO</th>
<th>ID PROVIDED BY OWNER</th>
<th>SEX</th>
<th>AGE GROUP 1</th>
<th>CONFIRMED PH GENOTYPE</th>
<th>OUTCOME DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3450789012345678</td>
<td>M</td>
<td>A</td>
<td>ARR/ARR</td>
<td>Unrestricted certificate</td>
</tr>
<tr>
<td>2</td>
<td>3450789012345555</td>
<td>F</td>
<td>A</td>
<td>ARR/ARR</td>
<td>Unrestricted certificate</td>
</tr>
<tr>
<td>3</td>
<td>2345340756430500</td>
<td>M</td>
<td>A</td>
<td>ARR/ARR</td>
<td>Unrestricted certificate</td>
</tr>
<tr>
<td>4</td>
<td>34253451251067</td>
<td>F</td>
<td>A</td>
<td>ARR/ARR</td>
<td>Unrestricted certificate</td>
</tr>
<tr>
<td>5</td>
<td>5678901234567425</td>
<td>F</td>
<td>L</td>
<td>ARK/ARK</td>
<td>No certificate/no restrictions</td>
</tr>
<tr>
<td>6</td>
<td>0123456789012345</td>
<td>M</td>
<td>S</td>
<td>AHO/ARQ</td>
<td>Unrestricted certificate</td>
</tr>
<tr>
<td>7</td>
<td>0986052000304374</td>
<td>S</td>
<td>S</td>
<td>ARQ/ARQ</td>
<td>Unrestricted certificate</td>
</tr>
<tr>
<td>8</td>
<td>09805400900283751</td>
<td>F</td>
<td>S</td>
<td>ARQ/ARQ</td>
<td>No certificate/no restrictions</td>
</tr>
<tr>
<td>9</td>
<td>096400000389929</td>
<td>F</td>
<td>A</td>
<td>ARQ/VRQ</td>
<td>No certificate/no restrictions</td>
</tr>
<tr>
<td>10</td>
<td>0964000000389686</td>
<td>L</td>
<td>S</td>
<td>VRQ/VRQ</td>
<td>Disposal or castration within 90 days</td>
</tr>
</tbody>
</table>

The total number of sheep sampled during this visit was 10.

The number of confirmed results for this visit is 10.

---

**NSP Helpline:** 0845 601 4858

---

**Helpline 0845 601 4858**
5.9 Return of test results

5.9.1 You will receive a Genotype Results Summary following the blood sampling visit, normally within 15 working days but this cannot be guaranteed for every sample. This will list each animal tested along with its genotype and associated outcome, EID number and any identification you have supplied, together with the sex and also the age of the animal at the time it was tested. The blood samples held in storage at the laboratories after the genotype results have been released may be used for further scientific research.

5.9.2 You may find that some results are missing from a particular batch, but these should follow at a later date. If any tests are inconclusive, NSPAC may arrange for a re-test or re-sample as appropriate.

5.9.3 If your sheep has already been privately genotyped and the NSP result differs, the NSP sample will automatically be re-checked. Depending upon the second result we may make arrangements to re-sample or issue a Certificate if appropriate.

5.9.4 Table 3 below shows whether or not Genotype Certificates will be issued and also sale and breeding restrictions, if applicable. This table is subject to continuous scientific review.

Table 3 – NSP Ram Genotyping Scheme Consequences Table

<table>
<thead>
<tr>
<th>Genotype</th>
<th>Type</th>
<th>Certificate?</th>
<th>Restrictions (males only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARR / ARR</td>
<td>1</td>
<td>✓ ✓</td>
<td>No restrictions apply</td>
</tr>
<tr>
<td>ARR / AHQ</td>
<td>✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARR / ARH</td>
<td>2</td>
<td>✓ ✓</td>
<td></td>
</tr>
<tr>
<td>ARR / ARQ</td>
<td>✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHQ / AHQ</td>
<td>✓ –</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHQ / ARH</td>
<td>✓ –</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHQ / ARQ</td>
<td>✓ –</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARH / ARH</td>
<td>3</td>
<td>✓ –</td>
<td>Immediate restriction on sale, transfer or breeding. Slaughter or Castration Form (NSP 7) issued immediately.</td>
</tr>
<tr>
<td>ARH / ARQ</td>
<td>✓ –</td>
<td></td>
<td>Slaughter or castration within required 90 days.</td>
</tr>
<tr>
<td>ARQ / ARQ</td>
<td>✓ –</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARR / VRQ</td>
<td>4</td>
<td>✓ –</td>
<td></td>
</tr>
<tr>
<td>AHQ / VRQ</td>
<td>✓ –</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARH / VRQ</td>
<td>5</td>
<td>✓ –</td>
<td></td>
</tr>
<tr>
<td>ARQ / VRQ</td>
<td>✓ –</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VRQ / VRQ</td>
<td>✓ –</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key
✓ NSP Genotype Certificate (NSP 4) issued
✗ Slaughter or Castration Form (NSP 7) issued immediately
– No Certificate issued/no action required
5.10 Significant undesirable genotypes

5.10.1 In some cases the Results Summary may indicate that a high proportion of your flock has undesirable genotypes and significant numbers of rams need to be slaughtered or castrated. NSPAC will be able to offer advice on selection and breeding programmes, which will aim to help owners improve the genetic profile and scrapie resistance of their flock where necessary, whilst retaining desirable breed traits. NSPAC may be able to offer further help, such as testing more rams or some ewes from the flock to establish appropriate agreed breeding programmes.

5.11 NSP Genotype Certificate
5.11.1 The NSP Genotype Certificate (NSP4) is an important document as it certifies that the sheep carrying the Electronic Identification (EID) device number specified is of a particular genotype. The Certificate also records any identification mark and/or name you specified at the time the EID was fitted. The Certificate will show any restrictions that may apply to the future sale or use for breeding of a particular sheep.

5.11.2 An NSP Certificate will be issued for each of your male sheep that carries a more resistant scrapie genotype. The genotypes for which Certificates will be issued are set out in Table 3. This table may be amended from time to time in the future.

5.11.3 Certificates for ewes tested under this scheme will only be issued for the following genotypes: ARR/ARR, ARR/AHQ, ARR/ARH and ARR/ARQ.

5.11.4 Supplementary services conducted under the Ram Genotyping Schemes may have different rules for issuing Certificates so you are advised to check the relevant literature.

5.12 Selling NSP certified sheep

5.12.1 If you sell an NSP certified sheep you must complete Section 4 of the Certificate, detach it and return it to NSPAC, and give the remainder of the Certificate to the new owner.

5.13 Buying NSP certified sheep

5.13.1 If you buy an NSP certified sheep, you should complete Section 3 of the Certificate, detach it and return it to NSPAC. If the Certificate is not passed on when the animal is purchased, NSPAC should be contacted so that arrangements can be made to identify the animal before it is used for breeding. Once this is done a new Certificate will be issued. However identification is not always possible, so it is in your interests to ensure that you receive the Certificate at the time of the sale.

5.14 Death of an NSP certified sheep

5.14.1 If a sheep has died or has been sold for slaughter, you must complete Section 2 of the Certificate and return the whole Certificate to NSPAC.

5.14.2 NSPAC may charge for the re-issue of a lost Certificate.
5.15 Failure of Electronic Identification (EID) device

5.15.1 If the EID device fails you must surrender the old Certificate when the sampler takes a new blood sample or return the old Certificate direct to NSPAC before the re-issue of a new Certificate.

5.16 Ram Register

5.16.1 A Register of all certified adult rams, shearling rams and ram lambs with an appropriate genotype (see Table 1), together with the name, area, postcode and telephone number of the owner (or agent) and their breed society, if appropriate, will be updated and published on the Internet at least at monthly intervals to aid the sale or loan of scrapie resistant sheep for breeding. NSPAC will not publish details of animals with an undesirable genotype or any other information that you may have disclosed.

5.16.2 It is important that NSPAC is informed of any changes to NSP certified sheep (e.g. such as their ownership or death) as this information is included in the Ram Register where appropriate.

5.16.3 NSPAC will provide a list of anonymous genotype results, to include EID, genotype, age category and sex, and send it to each breed society on a monthly basis so that they can monitor progress for their breed.

5.17 Slaughter or castration

5.17.1 Any ram or ram lamb with an undesirable genotype will be issued with a Slaughter or Castration Form (NSP 7) and must be rendered unusable for breeding. Slaughter or Castration Forms will have a ‘slaughter/castrate by’ date 90 days after the date of issue. You have the right to appeal against this decision by completing the appropriate section of the Slaughter or Castration Form (see para 5.18.2 on page 25 for further details on the grounds that appeals may be considered).
5.17.2 You are required to complete the Slaughter or Castration Form for each animal immediately after the animal has been sent for slaughter or has been castrated, and then return the form to NSPAC within 10 working days of the specified slaughter or castration date. There is no requirement to return the EID device from an animal that has been slaughtered.

5.17.3 You must complete the appropriate sections, sign and return the top (blue) copy of the Slaughter or Castration Form. You are advised to retain the second (yellow) copy of the Slaughter or Castration Form for your records.

5.17.4 If you choose to have your adult rams or shearling rams castrated, you must undertake to have this operation performed by a qualified Veterinary Surgeon. You must then complete Sections 3(b) and 3(c) of the Slaughter or Castration Form, giving the contact details of the vet who has conducted the surgery and return it to NSPAC within the specified deadline.

5.17.5 If an NSP ram, on which a Slaughter or Castration Form has been issued dies or is killed, you must complete Sections 3(a) and 3(c) of the Slaughter or Castration Form and return it to NSPAC within the specified deadline.

5.17.6 Any costs incurred in the disposal of animals that are subject to a Slaughter or Castration Form are the responsibility of the owner.

5.17.7 Please ensure that the Slaughter or Castration Form is returned to NSPAC within 10 working days of the specified slaughter or castration date.

5.18 Appeals against slaughter

5.18.1 Appeals against the requirement to slaughter or castrate male sheep can be made to NSPAC if your NSP flock has a high proportion of inappropriate or undesirable genotypes and if the genotype results cause significant difficulties to your breeding programme.

5.18.2 Appeals will be considered where for example, owners:

- require a period of grace in which to fatten stock prior to slaughter through an abattoir for human consumption;
- can show they have few most-resistant rams and are willing to enter into a controlled breeding programme to increase the scrapie resistance of the flock; or
- wish to retain animals for an agreed period within the context of an NSP controlled breeding programme to salvage important breed traits.
5.18.3 Please note that breeding programmes need to be agreed between NSPAC and the individual owner by issue of an amendment to your Contract.

5.19 New rams for the breeding flock

5.19.1 If you purchase or borrow any non-NSP certified rams, shearling rams or ram lambs for use within your tup breeding flock, you must not use them for breeding until they have been genotyped under the NSP. You should inform NSPAC immediately you acquire any non-NSP certified breeding rams (or semen – see section 5.20 below). NSPAC will endeavour to arrange a visit for a blood sample to be taken and an EID bolus to be administered. Please note that NSPAC cannot guarantee to be able to do this before the next scheduled visit.

5.19.2 If you purchase an NSP-certified breeding ram but do not receive the appropriate portion of the Certificate, you should contact NSPAC so that we can try to make arrangements to verify the animal’s identity. The sheep’s identity must be confirmed before it is used for breeding.

5.20 Semen

5.20.1 If you wish to take semen from one of your rams either for sale or for future use in your own breeding programme, you must ensure the rams you use have been genotyped and NSP certified prior to the collection of semen. You are also responsible for ensuring that the Artificial Insemination (AI) Centre properly segregates and labels the semen with the EID number of the ram.
5.20.2 If you wish to use semen from a non-NSP certified ram then you should contact NSPAC. If the ram is available, NSPAC will try to arrange for the ram to be genotype tested. If the ram is not available for testing or is dead, NSPAC will send the owner of the semen a Semen Genotyping Form (NSP20). This form enables the owner to arrange for their AI Centre to provide a sample of the semen to an NSP laboratory for genotype testing. NSPAC will then issue the genotype results to the semen owner and to you. It is your responsibility to ensure that the AI Centre involved correctly labels and segregates the batch of semen. For further information about the use of semen, please contact NSPAC.

5.21 Audits

5.21.1 We will issue an annual NSP Flock Audit Form which we want you to complete and return so that we can check that all of your sheep, including any deaths, sales or purchases during the year, are recorded accurately on our database. This is to ensure that the audit trail for the NSP is sound and the accuracy of the Ram Register is maintained.

5.21.2 Please note that to maintain the integrity of the NSP, we may also undertake random checks of flocks and random re-sampling of sheep either at markets, sales or at individual farms.
5.22 Costs and penalties

5.22.1 The Government will meet the full cost of the EID device, collection of blood samples, genotyping test, registration and certification of your sheep along with the publication of scheme registers for animals currently being tested under the Ram Genotyping Scheme. You will be responsible for the cost of slaughtering or castrating sheep of an undesirable genotype.

5.22.2 Please note that NSPAC will not be responsible for any loss in value of any sheep that is found to have an undesirable genotype.

5.22.3 Any applicant who withdraws from the NSP after signing a Contract may be liable to repay costs. Penalties may also apply to those who breach the terms of their Contract, or who interfere with EID devices or scheme documentation. You will find details of penalties in your scheme Contract Booklet.

5.22.4 If any of your sheep are injured or die as a result of any part of the blood sampling or EID device application process, reasonable compensation may be paid to the owner for this loss, provided the loss was a direct result from these procedures. You will find details of compensation payable in your scheme Contract Booklet.

5.23 Data Protection Act 1998 – Fair Processing Notice

5.23.1 The joint data controllers in respect of personal data that you provide in National Scrapie Plan (NSP) forms are: the Department for Environment, Food and Rural Affairs (Defra), the Scottish Executive Environment and Rural Affairs Department (SEERAD), and the Welsh Assembly Government, Department for Environment, Planning and Countryside (WAG-DEPC).

5.23.2 Personal data obtained for the purposes of the NSP is processed by the National Scrapie Plan Administration Centre (NSPAC), which is part of the State Veterinary Service (SVS) (an executive agency of Defra). NSPAC administers the NSP for Defra and on behalf of SEERAD and WAG-DEPC. NSPAC will:

- keep the personal data and will store it on a database along with identification data collected by the SVS on your sheep and your sheep’s NSP genotype test results;
- make some of that data available to contractors;
- make available to bona fide researchers details of the number of sheep that are entered into the NSP and certain other information e.g.
number of animals tested, breed, sex, type of EID device used, genotype by geographical location. Such information will be used for scientific research to help us determine the future direction of the NSP. We will not disclose or publish details of individual NSP members or their flocks to such researchers.

5.23.3 A data controller may be required to release information, including personal data and commercial information, on request, under the provisions of legislation containing access to information provisions (e.g. the Environmental Information Regulations 2004, the Freedom of Information Act 2000, or the Freedom of Information (Scotland) Act 2002). However, they will not permit any unwarranted breach of confidentiality nor will they act in contravention of their obligations under the (UK) Data Protection Act 1998.

5.23.4 In order to facilitate the provision of replacement sheep and in the interest of openness, we publish a Ram Register on the Internet which records details of NSP Type 1 rams, together with the name, telephone number and postcode of the owner (or their agent). (See section 5.16 for more details.) You can access the Register on line at www.defra.gov.uk/nsp.

5.23.5 If you wish to obtain a copy of your personal data held by NSPAC, please follow the procedure at www.defra.gov.uk/corporate/opengov/personaldata.htm. Defra’s public service guarantee on data handling, which gives details of your rights in respect of the handling of your personal data is also available on this website. If you don’t have access to the internet, please telephone the Defra helpline 08459 33 55 77 and ask to speak to the Data Protection Officer.

If you believe the information NSPAC holds concerning you is incorrect or out of date, please provide the accurate information in writing together with supporting evidence (if appropriate) to NSPAC. Please see the inside back cover for full contact details.
6 Other NSP schemes and initiatives

6.1 Compulsory Scrapie Flocks Scheme

6.1.1 Mandated by EU law, this scheme requires action on scrapie affected farms and became effective from July 2004 in England and Scotland (November 2004 in Wales). There are a number of restrictions and a three year period of TSE testing with negative results before an owner is free of the scheme controls. Compensation is paid for animals culled by government contractors under the rules of the scheme.

6.1.2 Following a veterinary assessment of epidemiological evidence, disease control options are either:

- genotyping followed by selective culling of susceptible genotypes, or
- whole flock culling.

The option for whole flock culling is rarely the appropriate option. More information on this scheme is available from the Compulsory Scrapie Flocks Scheme Booklet (NSP 39) which can be obtained from NSPAC or from the NSP web-site.
6.2 **Flock Register**

6.2.1 This is a voluntary scheme to recognise sheep flocks’ scrapie resistant status as required by the EU. There are 5 categories with Category A being the most resistant to scrapie. Registration Documents to verify the appropriate category are issued annually. More information on this scheme is available from the Flock Register Booklet (NSP 64) which can be obtained from NSPAC or from the NSP web-site where the Online Flock Register can also be viewed.

6.3 **Semen Archive**

6.3.1 An archive of semen is being established from rams of susceptible genotypes ie. those carrying the AHQ, ARH, ARQ or VRQ alleles. The Archive will make it possible to re-establish viable breeding populations of these sheep in the future if it should prove necessary. This is a collaborative initiative with the Northern Ireland Scrapie Plan and is overseen by the Semen Archive Management Board comprised of representatives of the UK Agriculture and Rural Affairs Departments and sheep industry stakeholders. More information on this initiative and the payments available can be obtained from the Breed Liaison Manager on 0845 0060008 or www.semen-archive.co.uk

6.4 **Semen Genotyping**

6.4.1 This is a service which offers genotyping of semen from rams that are dead or no longer available that will be used in flocks owned by National Scrapie Plan members. More information on this service is available from the leaflet: Using Artificial Insemination in National Scrapie Plan flocks (NSP 20 Notes) which can be obtained from NSPAC or from the NSP web-site.

6.5 **Welsh Ewe Genotyping Scheme (WEGS) II Years 4 and 5**

6.5.1 This scheme is open to members of the NSP’s Ram Genotyping Scheme with flock holdings in Wales. It is predominately aimed at testing ewe lambs so that farmers can include scrapie genotype in their selection criteria when retaining flock replacements. The scheme enables farmers to produce scrapie resistant breeding stock from the most resistant ewes in the flock, accelerating a flock’s transition towards genetic resistance to scrapie. Farmers will be allowed four years of genotyping under WEGS II. This means that farmers who joined WEGS II in 2003, and who have already received three years of ewe lamb genotyping, have been offered a one year extension to their contract. The scheme will close to applicants on 30 November 2006 or when the financial resources are committed, whichever is the earlier.
The address for the Welsh Assembly Government is:
http://www.new.wales.gov.uk/topics/environmentcountryside/ahw

6.6 NSP stand

6.6.1 The NSP has a stand at various sheep related events throughout the year. Staff in attendance at such events would be more than happy to discuss NSP schemes or any other aspect of the NSP with you. NSP scheme literature is available on the stands as well as information on the risk of scrapie in relation to specific breeds. You can also phone the NSP Helpline for statistics on individual breeds.

6.7 NSP Update

6.7.1 Twice a year, an NSP Update is dispatched to NSP members to keep you informed of the latest developments in the NSP. It is also available on the NSP web-site.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHDO</td>
<td>Animal Health Divisional Office</td>
</tr>
<tr>
<td>AI</td>
<td>Artificial Insemination</td>
</tr>
<tr>
<td>Allele</td>
<td>Gene component derived from one parent and contributing hereditary information from that parent</td>
</tr>
<tr>
<td>BSE</td>
<td>Bovine Spongiform Encephalopathy</td>
</tr>
<tr>
<td>Castration</td>
<td>To render unusable for breeding of a male sheep either by physical or chemical castration or vasectomy</td>
</tr>
<tr>
<td>CPH</td>
<td>County, Parish, Holding (or Holding) number</td>
</tr>
<tr>
<td>Defra</td>
<td>Department for Environment, Food and Rural Affairs</td>
</tr>
</tbody>
</table>
| Desirable genotype | TSE/scrapie resistant genotype  
(see Table 1)                  |
<p>| EID        | Electronic Identification                                                |
| Genotyping | A test on a blood, tissue or semen sample from a sheep using the DNA to determine its genetic makeup. This enables the NSP to ascertain its PrP genotype and thus its relative resistance or susceptibility to scrapie |
| LVI        | Local Veterinary Inspector                                               |
| NSA        | National Sheep Association                                               |
| NSP        | National Scrapie Plan                                                    |
| NSPAC      | National Scrapie Plan Administration Centre (Worcester)                   |
| Progeny    | Lambs born of parents within a flock.                                     |
| PrP        | Prion Protein                                                             |</p>
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEAC</td>
<td>Spongiform Encephalopathy Advisory Committee</td>
</tr>
<tr>
<td>SEERAD</td>
<td>Scottish Executive Environment and Rural Affairs Department</td>
</tr>
<tr>
<td>TSE</td>
<td>Transmissible Spongiform Encephalopathy</td>
</tr>
<tr>
<td>Tapping period</td>
<td>Time at which rams are introduced to fertile ewes</td>
</tr>
<tr>
<td>Undesirable genotype</td>
<td>TSE/scrapie susceptible genotype (see Table 1)</td>
</tr>
<tr>
<td>WAG DEPC</td>
<td>Welsh Assembly Government, Department for Environment, Planning and Countryside</td>
</tr>
</tbody>
</table>
## List of forms and booklets

<table>
<thead>
<tr>
<th>Form name</th>
<th>Form no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSP Scheme Brochure</td>
<td>NSP 1</td>
<td>This brochure which gives details of the NSP and the Ram Genotyping Scheme</td>
</tr>
<tr>
<td>Genotype Certificate</td>
<td>NSP 4</td>
<td>Issued for “desirable” genotypes</td>
</tr>
<tr>
<td>Slaughter or Castration Form</td>
<td>NSP 7</td>
<td>Issued for “undesirable” genotypes</td>
</tr>
<tr>
<td>Contract Agreement</td>
<td>NSP 9</td>
<td>Issued to RGS applicants to sign</td>
</tr>
<tr>
<td>Contract Schedule</td>
<td>NSP 10</td>
<td>Issued to RGS members with visiting details</td>
</tr>
<tr>
<td>Genotype Results Summary</td>
<td>NSP 11</td>
<td>Notification of genotype results</td>
</tr>
<tr>
<td>Using Artificial Insemination in NSP Flocks Leaflet</td>
<td>NSP 20 (Notes)</td>
<td>Information on semen genotyping</td>
</tr>
<tr>
<td>RGS Application Form</td>
<td>NSP 24</td>
<td></td>
</tr>
<tr>
<td>RGS Contract Booklet</td>
<td>NSP 25</td>
<td>Terms and Conditions of RGS</td>
</tr>
<tr>
<td>Compulsory Scrapie Flocks Scheme Booklet</td>
<td>NSP 39</td>
<td>Comprehensive details of this scheme</td>
</tr>
<tr>
<td>Flock Register Booklet</td>
<td>NSP 64</td>
<td>Comprehensive details of this scheme</td>
</tr>
<tr>
<td>Scrapie – Advisory notes for farmers</td>
<td>PB 9446</td>
<td>Information leaflet including clinical signs and reporting scrapie</td>
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The National Scrapie Plan Administration Centre (NSPAC)

The National Scrapie Plan Administration Centre administers the National Scrapie Plan (NSP) within Great Britain on behalf of the Department for Environment, Food and Rural Affairs (Defra), the Scottish Executive Environment and Rural Affairs Department (SEERAD), and the Welsh Assembly Government, Department for Environment, Planning and Countryside (DEPC). NSPAC is part of the State Veterinary Service (SVS) which is an Executive Agency of Defra.

NSP Helpline

If having read this brochure you have questions about the NSP you can ring the NSP Helpline which will normally be available between 08:30 and 17:00 hrs Monday to Friday (excluding public holidays). A Welsh speaker is usually available, or will call you back.

0845 601 4858
Local rate call charges apply

Correspondence

Alternatively, you may write to:

NSPAC
SVS
Whittington Road
Worcester WR5 2SU

We shall endeavour to respond to your letter promptly, generally within five working days following receipt at our offices.

E-mail address

nspac@svs.gsi.gov.uk

NSP web-pages

These are regularly updated and can be found at:

http://www.defra.gov.uk/nsp

Useful addresses and contacts

National Scrapie Plan Administration Centre (NSPAC)

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0845 601 4858

NSP web-site

www.defra.gov.uk/nsp

E-mail address

nspac@svs.gsi.gov.uk

Agriculture and Rural Affairs Departments for Great Britain

If you have specific policy questions officials within the National Scrapie Plan branches of the Agriculture and Rural Affairs Departments for Great Britain can be contacted as follows:

National Scrapie Plan Branch
Department for Environment, Food and Rural Affairs (Defra)
Area 7/05
1a Page Street
London SW1P 4PQ
Tel: 020 7904 6315

National Scrapie Plan Branch
Scottish Executive Environment and Rural Affairs Department (SEERAD)
Room 358, Pentland House
47 Robb’s Loan
Edinburgh EH14 1TY
Tel: 0131 244 6413

Welsh Assembly Government,
Department for Environment, Planning and Countryside (DEPC)
Office of the Chief Veterinary Officer
Cathays Park
Cardiff CF10 3NQ
Tel: 029 2082 5996

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