National Scrapie Plan for Great Britain

NSP 1
The National Scrapie Plan Administration Centre (NSPAC)

The National Scrapie Plan Administration Centre (NSPAC) 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 National Assembly for Wales Agriculture Department (NAWAD).

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 normally available, or will call you back.

0845 601 4858
Local rate call charges apply

Correspondence

Alternatively, you may write to:
National Scrapie Plan Administration Centre (NSPAC)
DEFRA
Whittington Road
Worcester
WR5 2LA

We shall endeavour to respond to your letter promptly, generally within five working days following receipt at our offices.
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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 also sets out general rules that will apply to all of the schemes that will be available under the NSP umbrella, and specific rules that apply to individual schemes. Your commitments and obligations to us and our commitments and obligations to you are set out in more detail in the relevant scheme Contract Booklet which we will send to you once you apply to join a scheme. The rules set out in your Contract Booklet 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.

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

3.1 Aim of the National Scrapie Plan

3.1.1 The aim of the National Scrapie Plan (NSP) for Great Britain is to reduce and eventually eliminate scrapie from the national sheep flock.

3.1.2 The NSP has been developed jointly by the Agriculture and Rural Affairs Departments for Great Britain as part of the Rural Development Plans for England and Wales and the Agriculture Strategy for Scotland.

3.2 What is the National Scrapie Plan

3.2.1 The NSP is a voluntary, long-term initiative which will consist of three main elements:

- a breeding programme to increase the genetic resistance of the national flock to scrapie;
- a programme to help deal with scrapie affected flocks; and
- a programme to monitor for scrapie within scheme flocks.

3.2.2 The NSP builds upon existing genotyping programmes of individual breed societies and is based on extensive consultation with industry stakeholders during the summer of 2000.
3.2.3 The breeding programme for genetic resistance is expected to consist of five separate schemes. The Ram Genotyping Scheme for Purebred Registered Flocks will be followed by further schemes targeting other sectors of the sheep industry, such as a Ewe Genotyping Scheme and a Dairy Flock Scheme. Further schemes will be launched following consultation with the sheep industry. The timing of these future schemes is not yet certain.

3.3 Why have a National Scrapie Plan?

3.3.1 Advice from independent experts on Transmissible Spongiform Encephalopathy (TSE) diseases such as scrapie and BSE, is that a long-term programme is the best way to control and eliminate scrapie. Although there is no known link with human disease, there is a number of good reasons for tackling scrapie in this way now:

- 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 protect against the acknowledged 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 this risk;
- 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. It is intended that further information about scientific developments, and the impact of the NSP programme on the TSE resistance of the national flock will be published annually in an NSP Yearbook. It is our intention to produce the first NSP Yearbook at the end of 2002, the first full year of the NSP.
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 Office (AHO).

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 for 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. 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 National Scrapie Plan

4.2.1 Studies of the genetics of sheep have shown it is possible to identify whether sheep are resistant or susceptible to TSEs by testing a blood 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 556000 – To order the advisory leaflet Scrapie – Advisory Notes for Farmers (PB4709)
4.2.2 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 determines 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 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

4.2.3 It is the pairing of alleles inherited from both parents that determines the genotype of the sheep. Up to 15 genotypes are known to 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 this is the most susceptible to scrapie.
4.2.4 Table 1 shows the 15 genotypes known to occur in sheep and their resistance or susceptibility to scrapie.

**Table 1 – Table of genotypes**

<table>
<thead>
<tr>
<th>Genotype result</th>
<th>Consequence of genotype result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ARR/ARR</strong></td>
<td>Sheep that are genetically most resistant to scrapie.</td>
</tr>
<tr>
<td><strong>ARR/AHQ</strong></td>
<td>Sheep that are genetically resistant to scrapie, but will need careful selection when used for further breeding.</td>
</tr>
<tr>
<td><strong>ARR/ARH</strong></td>
<td>Sheep that genetically have little resistance to scrapie but may be sold or used for breeding without restriction until the end of 2004.</td>
</tr>
<tr>
<td><strong>ARQ/ARH</strong></td>
<td>After this period, any ram on a scheme farm may continue to be used for breeding for a further three years (except *), or until the end of its life (whichever is the sooner). Certificates issued show the date after which the animal cannot be sold or used for further breeding.</td>
</tr>
<tr>
<td><strong>ARQ/VRQ</strong></td>
<td>Sheep that are genetically susceptible to scrapie but may exceptionally be used for further (controlled) breeding in the context of an approved breeding programme.</td>
</tr>
<tr>
<td><strong>AHQ/VRQ</strong></td>
<td>Sheep that are highly susceptible to scrapie and should not be used for breeding.</td>
</tr>
<tr>
<td><strong>ARH/VRQ</strong></td>
<td>Rams must be humanely slaughtered or castrated.</td>
</tr>
</tbody>
</table>

*subject to scientific review after the first year

4.2.5 There is more than one form of the scrapie agent. The ARQ/ARQ genotype is susceptible to some forms of scrapie and very susceptible to experimental BSE. There will be a scientific review after the first year of results to consider the amount of genetic pressure that should be placed on the ARQ gene.

4.2.6 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 and excluding the VRQ gene (which scientific research indicates is the most susceptible to TSEs) and...
allow the continued use of sheep with the ARH, ARQ and AHQ genes for a limited (three year) period.

4.2.7 Currently available science indicates that, as a result of the NSP, we should see a reduction in the incidence of scrapie and eventually its disappearance from the national flock. We therefore hope that as many eligible sheep breeders as possible will want to play their part in the NSP.
5 General scheme rules

5.1 Introduction

5.1.1 The various schemes that will be developed and form part of the NSP will have a number of common rules and features which are described in this section.

5.2 Entry

5.2.1 To join any of the NSP schemes, you must first complete an Expression of Interest (EoI) Form, NSP 2. This will give us details of the owner, agent and/or keeper of the flock, and tell us whether you are already a member of the NSP. It is also used to gather other important information e.g. the keeper’s CPH details (holding number) so that we know how to contact you.

5.2.2 EoI Forms and Application Forms (NSP 3) will be processed on a first come, first served basis. Please note that a separate EoI Form is required for each flock, as each one will generate an Application Form for that flock.

5.3 Application procedure

5.3.1 Once we have checked your eligibility for the scheme to which you have expressed an interest, we will reprint the details you have provided on the Application Form, which will ask some further questions e.g. when your flock could be made available for blood sampling. We will try to arrange testing during these times 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.

5.3.2 Please note that we cannot undertake a sampling visit to premises where restrictions are in place because of disease control, such as Foot and Mouth. 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 Contract

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

5.4.2 We will send you two copies of the Contract, which you will be required to sign and return both copies promptly to NSPAC. Once NSPAC has signed the Contract Agreement, one copy will be returned to you with confirmation that a visit has been scheduled. Your local Animal Health Office will be in touch nearer the time to agree the precise date and time for the farm visit.

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

5.5 The sampling visit

5.5.1 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.

5.5.2 You will be sent a copy of the NSP Blood Sampling Protocol with your contract. This sets out the procedures to be followed by you and the sampler when taking blood samples and recording the identity of each animal selected. You or a representative must be present during the farm visit to oversee the procedures and to ensure they are carried out satisfactorily. We shall ask for your signature on the samplers job sheet to this effect.
5.5.3 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 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 officials at markets and sales so that a sheep’s identity can be checked at the time of its sale.

5.5.4 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 fitted 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.

5.5.5 No sheep can be accepted into the NSP without an approved EID device and this must not be tampered with or removed. You must contact NSPAC if you suspect that the EID has stopped working or been ejected.

5.5.6 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.

5.5.7 Please note that we shall blood test all sheep entered under the scheme, even if you have a private genotype certificate. 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.

5.6 Return of test results

5.6.1 Genotype results will normally be available within 15 working days of the sampling visit. If the test is inconclusive, NSPAC will arrange for a re-test or re-sample as necessary.
5.6.2 If your sheep has already been privately genotyped and the NSP result differs, the NSP sample will automatically be re-checked. If the check test result is the same as the private genotype test an NSP certificate will be issued. If the check test still does not agree with the private genotype test we will arrange to re-sample the animal concerned to establish the correct genotype.

5.6.3 For more information about the genotype test results, please refer to Section 7 of this brochure.

5.7 NSP Genotype Certificate

5.7.1 An NSP Certificate will be issued for each of your male sheep that carries a scrapie resistant genotype (or otherwise meet the criteria set out in Table 1, as amended from time to time). Depending upon your progress within the scheme, you may face tighter restrictions on the sale or use for breeding of your rams. Such changes will be agreed with you by NSPAC and will be set out in your Contract Schedule.

5.7.2 Certificates for male sheep that do not have the scrapie resistant genotypes will indicate a date after which the animal cannot be sold or used for further breeding (see Table 1).

5.7.3 Certificates for ewes will only be issued if they carry the ARR gene (but not the ARR/VRQ genotype).

5.7.4 For more information about the use of NSP Genotype Certificates and for an example of this document, please refer to Section 8 of this brochure.

5.7.5 We may require you to dispose of sheep that carry a scrapie susceptible genotype (see Table 1), and in such circumstances will issue you with a Slaughter or Castration Form. This will require you to arrange for the slaughter or castration\(^2\) of a male animal so that it cannot be used for further breeding.

5.8 Significant undesirable genotypes

5.8.1 NSPAC can offer advice on the way forward if your flock’s genotype results indicate a high proportion of undesirable genotypes i.e. those that would be issued with Slaughter or Castration Forms.

\(^2\)See definition in Glossary
5.8.2 **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.

5.9 **Audits**

5.9.1 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 robust.

5.9.2 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 the individual farm.

5.10 **Costs and penalties**

5.10.1 For the time being, 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 printing and publication of scheme registers. You will be responsible for the cost of slaughtering or castrating sheep of an undesirable genotype.

5.10.2 Please note that NSPAC will not be responsible for any consequential loss for any sheep that is found to have an undesirable genotype.

5.10.3 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.

5.11 **Statistical information**

5.11.1 We will 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.
6 Specific scheme rules

6.1 Introduction
This section of the brochure lists certain specific rules that apply to The Ram Genotyping Scheme for Purebred Registered Flocks. Other schemes will be included once they are launched. It should be read in conjunction with the general NSP rules in Section 5 and with the terms and conditions contained in any contract you may be sent upon applying to join the scheme in question.

The Ram Genotyping Scheme for Purebred Registered Flocks

6.2 Applications
6.2.1 This Scheme is open to owners of purebred ‘tup’ breeding flocks, registered with a National Sheep Association recognised Breed Society. A separate EoI Form (NSP 2) must be submitted for each tup breeding flock.

6.2.2 Applications that are received from owners who are not registered with Breed Societies cannot be considered.

6.3 Number of sheep to be tested
6.3.1 All adult (stock) rams in the flock plus any male progeny that are to be used for breeding within a flock will be tested, plus 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. 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.

6.3.2 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 10% (rounded up to the nearest whole number). Owners will be required to produce documentary evidence to support the number of male progeny they have sold the previous year, which should be submitted with the application.3

3If there has been disruption to ram sales during 2001 due to FMD then evidence of sales during the previous year will be accepted.
6.3.3 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.

6.3.4 At the time of the farm visit the samplers will ask to verify the number of breeding ewes by checking the flock movement book.

6.4 **Contracts**

6.4.1 The Contract will provide for the testing of your flock over three years. The agreed number of sheep to be tested each year and the week during which sampling is to be undertaken will be shown in the Contract Schedule.

6.5 **Further sampling**

6.5.1 In subsequent years any new adult rams will be tested plus a proportion of ram lambs and shearling rams that are to go for sale as breeding rams. The rules for minimum number of sheep to be tested apply to future visits. We shall also endeavour to test any new breeding animals you buy during the year as opportunities arise and subject to the availability of resources.

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

6.6 **Genotype results**

6.6.1 The results of the genotype tests will normally be issued in summary form within 15 working days of the farm visit.

6.6.2 A Genotype Certificate will subsequently be issued for each ram and ram lamb of an appropriate genotype. For male sheep that do not have the most resistant genotypes the Certificate specifies a date after which the ram can no longer be sold and a date after which it can no longer be used for further breeding (see Table 1).
6.6.3 A certificate will also be issued for any female sheep carrying the ARR gene (excluding the ARR/VRQ genotype) that may have been tested.

6.7 **Slaughter or castration**

6.7.1 Any ram or ram lamb of an undesirable genotype must be rendered unusable for breeding (either by slaughtering or castration) within 14 days of the issue of a Slaughter or Castration Form. *Any costs incurred in the disposing of these animals are the responsibility of the owner.*

6.7.2 Male sheep of an undesirable genotype may be sent for slaughter at one of the abattoirs listed in the Annex. The animals must be spray-marked on their backs with ‘NSP’ and presented to an officer of the Meat Hygiene Service (MHS) at the abattoir. The MHS will verify the identity of the animal by checking the EID device number, complete the Slaughter or Castration Form and return it to NSPAC. A copy of the form will be given to you or your representative. Where an EID device cannot be read, the MHS will recover and forward it to NSPAC’s authorised representative for verification.

6.7.3 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. They should read the bolus, endorse the appropriate sections of the Slaughter or Castration Form and return it to NSPAC.

6.7.4 If an NSP sheep on which a Slaughter or Castration Form has been issued dies suddenly, has to be slaughtered on welfare grounds or is killed for home consumption, you should contact NSPAC (or your local Animal Health Office) who will arrange for an official to attend and check the EID number of the animal, or may give alternative instructions.

6.8 **Appeals against slaughter**

6.8.1 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.

6.8.2 Appeals will be considered where for example owners:

- require a period of grace in which to fatten stock prior to slaughter for human consumption through an abattoir;
- can show they have few 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.

6.8.3 Please note that breeding programmes will need to be agreed between NSPAC and the individual owner by exchange of letter to amend your Contract.

6.9 New rams for the breeding flock

6.9.1 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 6.10 below), and they will endeavour to arrange for the SVS to visit, take a blood sample and insert an EID bolus. Please note that NSPAC cannot guarantee to be able to do this before the next scheduled visit.

6.9.2 If you purchase an NSP-certified breeding ram but do not receive the appropriate portion of the Certificate, you should contact NSPAC so that arrangements can be made to verify the animal’s identity before it is used for breeding.

6.10 Semen

6.10.1 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 certified prior to the collection of semen. You are also responsible for ensuring that the AI Centre properly segregates and labels the semen with the EID number of the ram.
6.10.2 If you wish to use non-NSP certified semen in your breeding programme e.g., from a ram that is no longer alive, you must arrange for your AI Centre to provide a sample of the semen to a NSPAC nominated NSP laboratory for genotyping. Provided the semen is of an appropriate genotype, NSPAC will issue a Semen Certificate and you will be responsible for notifying your AI Centre and ensuring the remainder of the semen is properly segregated and appropriately labelled.

6.10.3 For further information about the use of semen, please contact NSPAC.

6.11 Ram Register

6.11.1 A register of all certified adult rams, shearling rams and ram lambs with an appropriate genotype (see Table 1), together with the name, address and telephone number of the owner (or agent) and their Breed Society, will be published at least at monthly intervals to aid the sale or loan of scrapie resistant sheep for breeding. NSPAC shall not publish details of animals with an undesirable genotype or any other information that you may have disclosed.

6.11.2 We shall provide an anonymous list of all genotype results, to include EID, genotype, age category and sex under the NSP, to each Breed Society on a monthly basis so that they can monitor progress for the breed.

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4Arrangements for such testing will be made available for a short period at the outset of the scheme.
5It is intended that publications will be available on the Internet.
7 Genotype Results Summary (Form NSP 11)

7.1 Genotype Results Summary

7.1.1 You will receive a Genotype Results Summary following the Blood Sampling visit, normally within 15 working days. This will list each animal tested against its genotype and associated outcome, EID number and any identification you have supplied, together with the sex and age of the animal.

<table>
<thead>
<tr>
<th>NSP EID No.</th>
<th>ID provided by owner</th>
<th>Sex</th>
<th>Age Group</th>
<th>Confirmed PHP Genotype</th>
<th>Outcome Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3466 7890 1212 3678</td>
<td>DV 123456</td>
<td>M</td>
<td>A</td>
<td>ARH/ARH</td>
<td>Unrestricted Certificate</td>
</tr>
<tr>
<td>3466 7890 1212 5555</td>
<td>DV 234567</td>
<td>F</td>
<td>A</td>
<td>ARH/ARH</td>
<td>Unrestricted Certificate</td>
</tr>
<tr>
<td>3345 3456 5643 0000</td>
<td>Bar Tag 3524</td>
<td>M</td>
<td>A</td>
<td>ARH/ARH</td>
<td>Unrestricted Certificate</td>
</tr>
<tr>
<td>3425 3245 1221 0987</td>
<td>Bar Tag 2345</td>
<td>P</td>
<td>A</td>
<td>ARH/ARH</td>
<td>Unrestricted Certificate</td>
</tr>
<tr>
<td>5678 9632 5647 1456</td>
<td>Tattoo no. 321539</td>
<td>P</td>
<td>L</td>
<td>ARQ/ARQ</td>
<td>Restricted Certificate</td>
</tr>
<tr>
<td>0123 4567 0901 2345</td>
<td>Champion Junior 323456</td>
<td>M</td>
<td>S</td>
<td>ARQ/ARQ</td>
<td>Restricted Certificate</td>
</tr>
<tr>
<td>1234 8769 0101 314</td>
<td>Blue Tag no. 3456789</td>
<td>M</td>
<td>S</td>
<td>ARQ/ARQ</td>
<td>Restricted Certificate</td>
</tr>
<tr>
<td>1234 8769 0101 7690</td>
<td>Orange Tag no. 3456289</td>
<td>P</td>
<td>S</td>
<td>ARH/ARH</td>
<td>Restricted Certificate</td>
</tr>
<tr>
<td>3456 7890 2222 4567</td>
<td>Tattoo no. 322321</td>
<td>P</td>
<td>A</td>
<td>ARQ/ARQ</td>
<td>Restricted Certificate</td>
</tr>
<tr>
<td>7890 1234 5678 9012</td>
<td>Bar Tag 123456</td>
<td>M</td>
<td>L</td>
<td>VQ/ARQ</td>
<td>Diagonal or Castration within 14 days</td>
</tr>
</tbody>
</table>

TOTAL CONFIRMED GENOTYPES: 10

1 Sex: 
M = Male
F = Female
N = Neutered (Castrated)

2 Age Group (at time of testing): 
A = Adult
S = Shearing
L = Lamb

Helpline 0845 601 4858
7.1.2 You may find that some results are missing from a particular batch, but these should either follow at a later date, or you will be advised if the test was inconclusive and has to be repeated. If the results are unfavourable, you should contact NSPAC who will be able to advise you how to proceed under the NSP.

**Table 2 – The consequences depending on genotype**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unrestricted Certificate</td>
<td>Given to sheep with an acceptable genotype. No restrictions on breeding or sale of animals.</td>
</tr>
<tr>
<td>Restricted Certificate</td>
<td>Sheep that can be used for sale or breeding up to the date given on the Certificate.</td>
</tr>
<tr>
<td>Slaughter or Castration within 14 days</td>
<td>Sheep with a susceptible genotype that must be humanely slaughtered or castrated.</td>
</tr>
<tr>
<td>No Certificate/no restrictions</td>
<td>Female sheep. Only issued for ewes carrying the ARR gene (except ARR/VRQ genotype). Other genotype results not certified and not restricted.</td>
</tr>
</tbody>
</table>

*A more detailed consequences table for your flock will be printed in your Contract Schedule.*

7.1.3 In some cases the Results Summary may indicate that a high proportion of your flock has undesirable genotypes and significant numbers of animals need to be slaughtered or castrated. NSPAC is prepared to deal with this situation and can offer advice and assistance on what to do next. This may involve following an agreed breeding programme or testing more animals to increase the level of resistance within your flock.

7.1.4 If you do find you have problems once you receive the Results Summary please contact NSPAC on 0845 601 4858.
8 NSP Genotype Certificate (Form NSP 4)

8.1 Introduction

8.1.1 The NSP Genotype Certificate 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.

8.1.2 Sheep with an undesirable genotype will be issued with a Slaughter or Castration Form and must be slaughtered or castrated within 14 days of the date on the form. You have the right to appeal against this decision (see para 6.8 for further details on the grounds that appeals may be considered).

8.2 Selling NSP certified sheep
8.2.1 If you sell a certified NSP 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.

8.3 Buying NSP certified sheep
8.3.1 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 verify the identity of the animal before it is used for breeding. Once this is done a new Certificate will be issued.

8.4 Death of an NSP certified sheep
8.4.1 If the sheep has died or been slaughtered, you must complete Section 2 of the Certificate and return the whole of the Certificate to NSPAC.

8.4.2 NSPAC may charge for the re-issue of a lost Certificate.

8.5 Failure of EID
8.5.1 If the EID fails you must surrender the old Certificate when the sampler takes a new blood sample or return it direct to NSPAC before the reissue of a new Certificate.

_It is important that NSPAC are informed of any changes to NSP certified sheep (e.g. such as their ownership or death) as this information will be included in the ram register. This register contains contact details of owners of certified rams and will be published (including on the Internet) to facilitate the sale or loan of scrapie resistant sheep for breeding._
## Glossary of terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHO</td>
<td>Animal Health 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>CPH</td>
<td>County, Parish, Holding (or Holding) number</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>EID</td>
<td>Electronic Identification</td>
</tr>
<tr>
<td>EoI</td>
<td>Expression of Interest (Form NSP 2)</td>
</tr>
<tr>
<td>Desirable genotype</td>
<td>TSE resistant genotype (see Table 1)</td>
</tr>
<tr>
<td>DEFRA</td>
<td>Department for Environment, Food and Rural Affairs</td>
</tr>
<tr>
<td>Genotyping</td>
<td>A test on a blood or tissue sample from a sheep using the DNA to determine its genetic makeup – for the NSP, to ascertain its PrP genotype (i.e. its resistance or susceptibility to the disease)</td>
</tr>
<tr>
<td>LVI</td>
<td>Local Veterinary Inspector</td>
</tr>
<tr>
<td>MHS</td>
<td>Meat Hygiene Service</td>
</tr>
<tr>
<td>NAWAD</td>
<td>National Assembly for Wales Agriculture Department</td>
</tr>
<tr>
<td>NSP</td>
<td>National Scrapie Plan</td>
</tr>
<tr>
<td>NSPAC</td>
<td>National Scrapie Plan Administration Centre (Worcester)</td>
</tr>
<tr>
<td>Progeny</td>
<td>Lambs born of parents within a flock.</td>
</tr>
<tr>
<td>PrP</td>
<td>Prion Protein</td>
</tr>
<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>
</tbody>
</table>

**Helpline 0845 601 4858**
SVS  State Veterinary Service

Teasers  Castrated ram used during tupping period to stimulate and increase ewe ovulation rate

TSE  Transmissible Spongiform Encephalopathy

Tup  Ram

Tupping  Period in which rams are introduced to fertile ewes

VetNet  Computer system that supports the work of the SVS

Undesirable genotype  TSE susceptible genotype (see Table 1)
Abattoirs which will slaughter sheep with inappropriate genotypes

This list is still in preparation at the time of printing. NSPAC will write to you separately with a complete list as soon as possible.
Useful addresses and contacts

National Scrapie Plan Administration Centre (NSPAC)

NSPAC Helpline

Normally available between 08:30 and 17:00 hrs Monday to Friday (excluding public holidays).

Tel: 0845 601 4858. (Local rate call charges apply).

Or write to us at:

National Scrapie Plan Administration Centre (NSPAC)
DEFRA
Whittington Road
Worcester
WR5 2LA

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 3/05
1a Page Street
London SW1P 4PQ
Tel: 020 7904 8210

The National Scrapie Plan Branch
Scottish Executive, Environment and Rural Affairs Department (SEERAD)
Room 348, Pentland House
47 Robbs’ Loan
Edinburgh EH14 1TY
Tel: 0131 244 3375

National Assembly for Wales Agriculture Department (NAWAD)
APD 3, Cathays Park
Cardiff CF10 3NQ
Tel: 029 2082 3189