Classical Scrapie Surveillance in Great Britain

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Introduction

Scrapie, one of the Transmissible Spongiform Encephalopathy group, is a fatal and degenerative disease which affects the central nervous system of sheep and goats. There are two types of Scrapie – Classical and Atypical. Classical Scrapie is known to affect animals aged between 2 and 5 years old. It is highly contagious and can be spread via colostrum and milk, bedding, equipment and birthing areas of infected animals. Atypical Scrapie affects animals older than 5 years and is considered to be less infectious.

Both Active and Passive surveillance in sheep is carried out within Great Britain (GB). Active surveillance began in January 2002 as a result of Regulation (EC) No. 999/2001 and the recommendation of the Spongiform Encephalopathy Advisory Committee (SEAC) to estimate the prevalence of sheep Scrapie in the British flocks. The programme includes surveys on the slaughtered population in abattoirs (AB) and the fallen stock on farm (FS). Passive surveillance (P), where suspect cases showing clinical signs are reported and tested, is conducted in parallel.

Aims

- The aim of the Scrapie surveillance programme is to conduct analysis of the available testing routes of Scrapie in sheep in GB (Figure 1).
- To compare results and to detect trends; this analysis focuses on the period 2002-2018.
- To achieve the goal of eradicating Scrapie in Great Britain.

Overview of Scrapie Surveillance

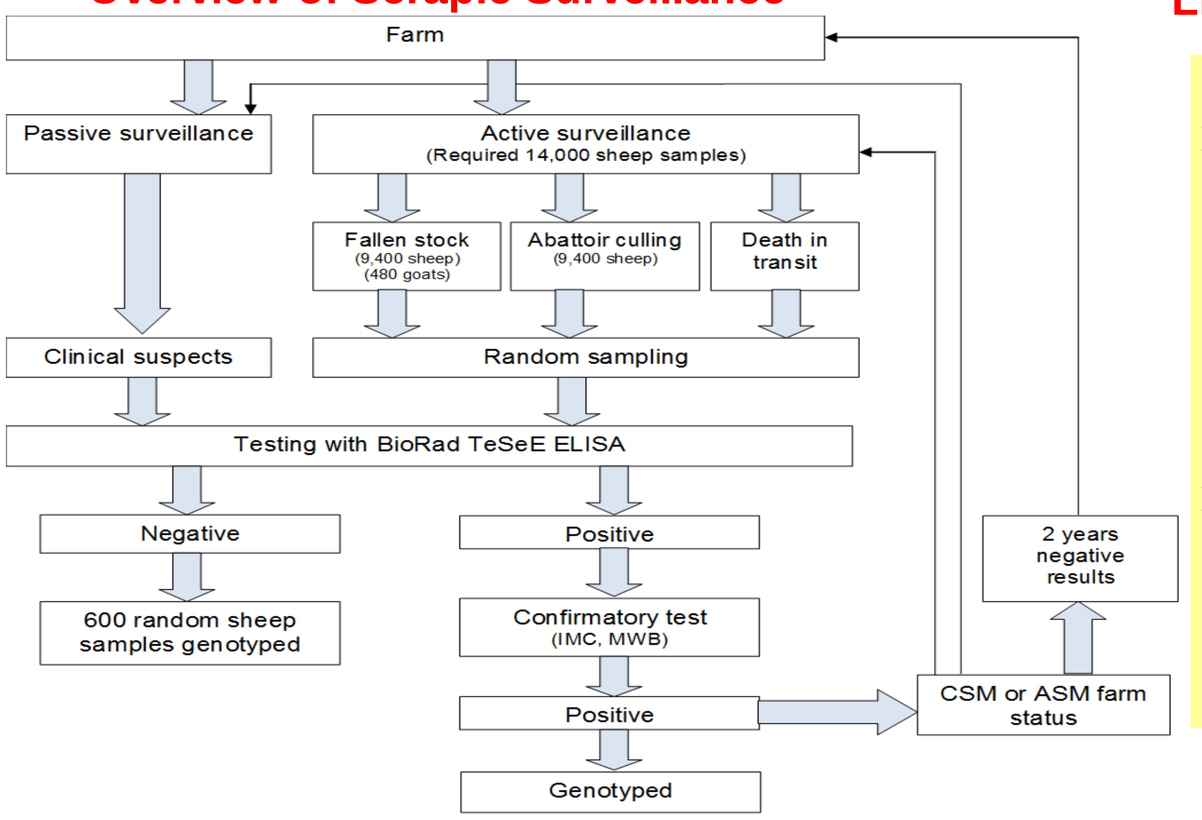
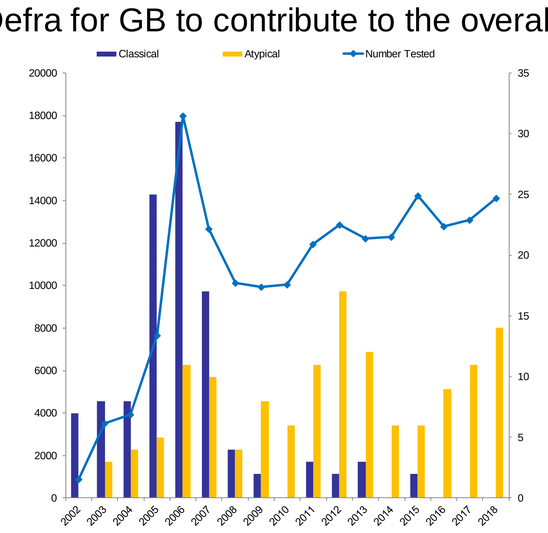


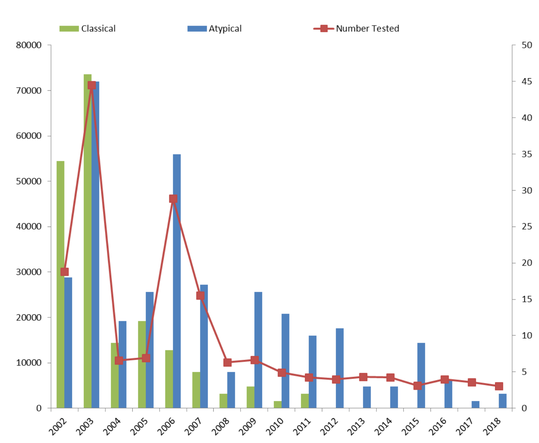
Figure 1. Structure of the Scrapie surveillance system in the Great Britain (the required numbers are adjusted by Defra for GB to contribute to the overall total of 20,000 for UK)

Limitations of the Surveillance

- Active surveillance data is limited to participating abattoirs and fallen stock sites, and although the sites are fairly evenly distributed around the country, they do not cover all sheep farms.
- Passive surveillance is very much dependent on the farmer, and to some extent the veterinary officer, detecting clinical signs of Scrapie and taking prompt action.

Results





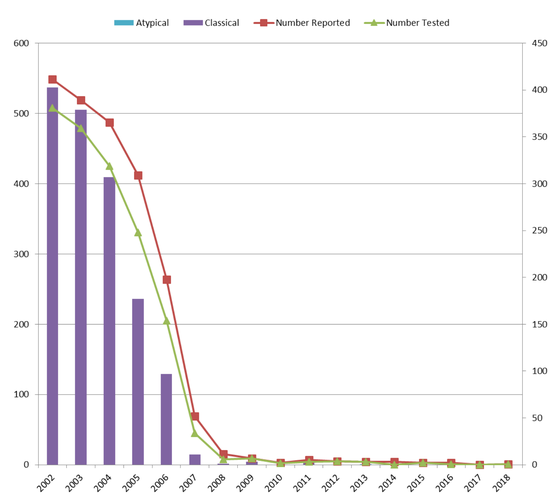


Figure 2: Number of sheep samples tested for Scrapie under the Fallen Stock Survey, Abattoir Survey and Passive surveillance from right to left

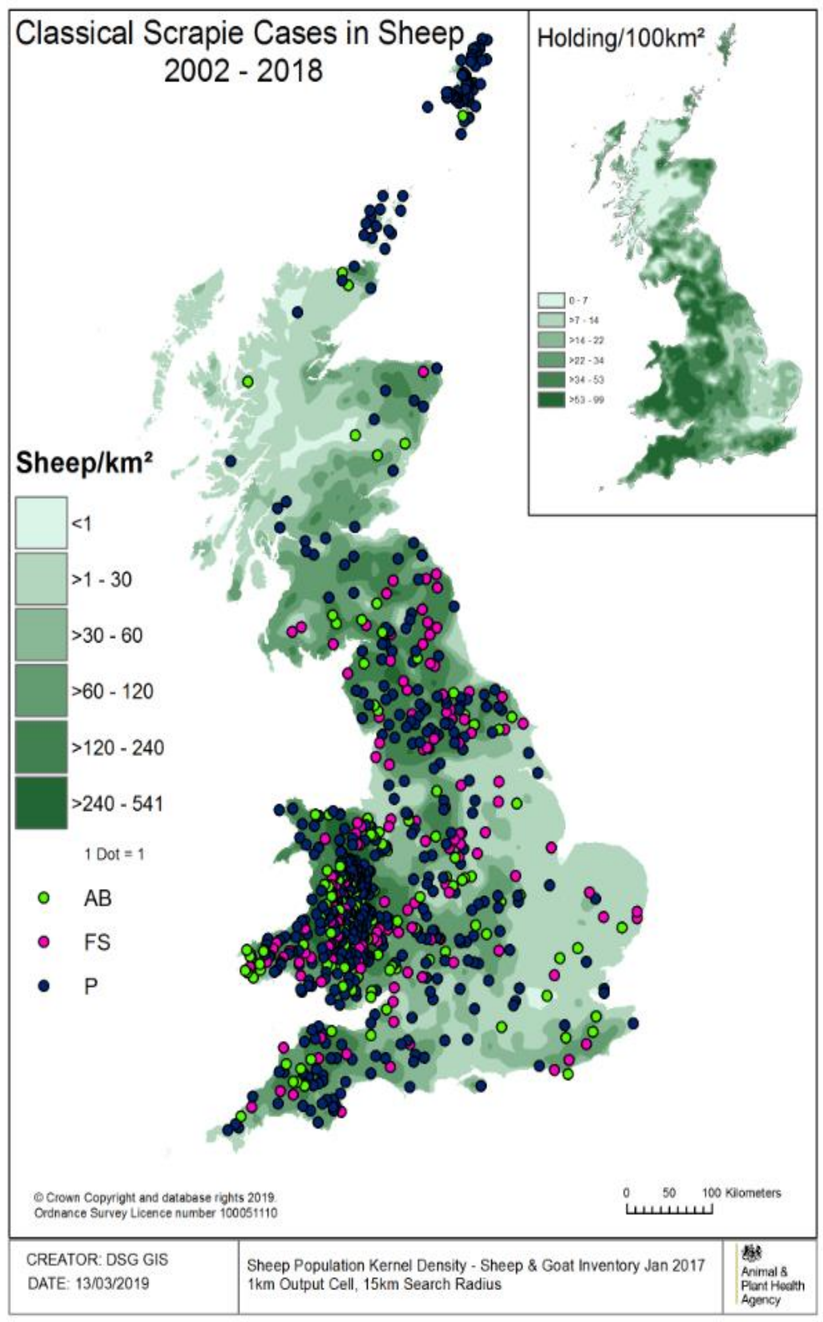


Figure 3: Map of Classical Scrapie distribution in GB 2002-2018

The number of animals tested through the Abattoir Survey since 2007 (Figure 2), due to disproportionate cost. Maintaining the Abattoir Survey contributes an unbiased data source for the estimation of the prevalence of Scrapie in GB. Figure 3, shows the geographical distribution of Scrapie cases detected by various surveillance methods in GB from 2002-2018 over the sheep population density based on the Sheep & Goat Inventory as of January 2016.

Conclusion

Only **24 Classical Scrapie cases** were detected out of 190,998 samples tested from all three surveillance streams in GB from 2009-2018, with significant decline in the numbers of Classical Scrapie incidences in recent years. The majority of Classical Scrapie cases confirmed in the Scottish Isles were through the Passive surveillance stream.

This decline could be attributed to two main control tools:

- Identification and management of infected flocks
- Breeding for resistance, the National Scrapie Plan which ended in 2009

Eradication of Scrapie is reliant on detection of infected animals through the surveillance programme and through culling or good management of infected flocks. Given the characteristics of this disease and the persistence of the pathogen in the environment for years, reintroduction of the breeding programme would likely be a successful approach to achieve eradication. Continuous monitoring and breeding strategies are currently the only measures that can be effective for the eradication.

Success of Classical Scrapie Surveillance

The overall GB strategy implemented over the years has proven to be a great success in reducing classical scrapie in the country.