

A review of feed controls to prevent BSE with particular reference to Great Britain

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Background: The National Feed Audit (NFA) is an inspection scheme which ensures that all operators within the animal feed chain in Great Britain (GB) are correctly following feed ban controls to prevent animal diseases, in particular, bovine spongiform encephalopathy (BSE). The NFA belongs to a series of measures put in place to ensure food safety and consumer protection as set out in the European Union (EU) TSE Roadmap¹ along with disease surveillance in live animals and removal of specified risk material (SRM) at slaughter (Fig 1). The number of detected cases of BSE in cattle in the EU has dropped since mitigation measures such as feed controls were introduced (Fig 2). The BSE Inquiry into GB cases considered the introduction of NFA testing to be one of the measures that had a “dramatic cumulative effect in reducing infection year on year”.

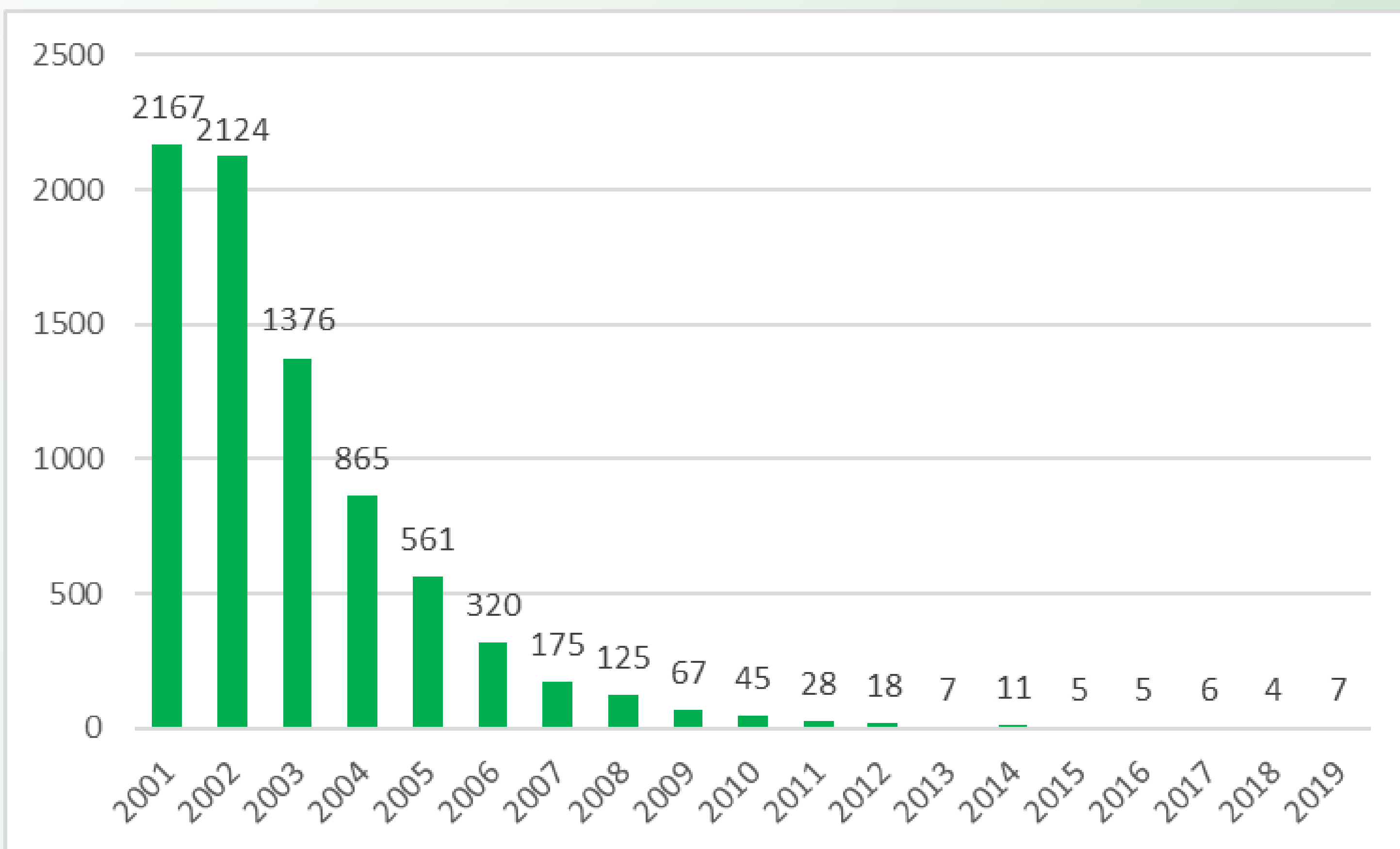


Fig. 2: Evolution of the number of total BSE (classical and atypical) positive cases in the EU since 2001 based on TSE Roadmap¹.

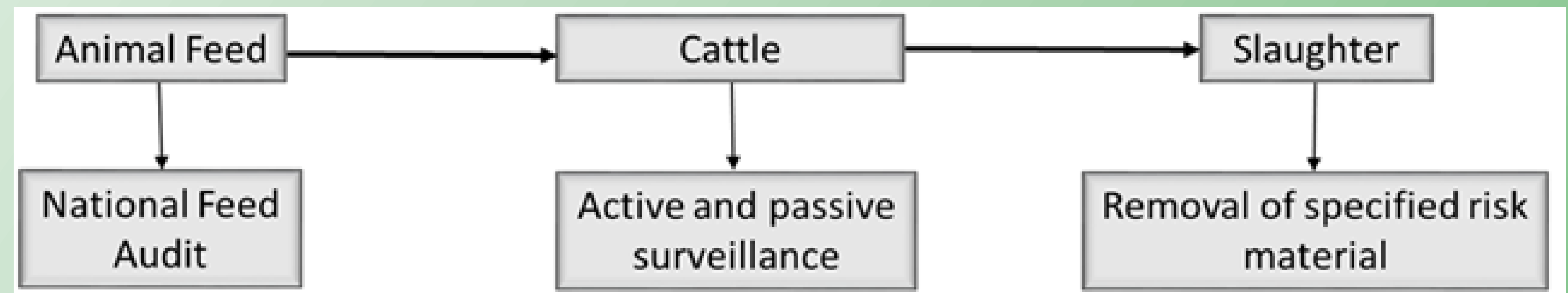


Fig. 1: The European Union (EU) TSE Roadmap¹ illustrated measures for ensuring food safety and consumer protection

Methods: We reviewed the NFA scheme with regard to it accommodating the dynamic BSE situation within GB and highlighted areas which could further optimise the NFA in this regard. The data collected by the NFA were analysed to see at which points within the network samples were currently being tested and where contaminants were most frequently found. The objective of this was to give an indication of the efficiency of the NFA to detect feed samples containing contaminants.

Results: Livestock farm and feed mill samples represent the largest number of samples taken by the NFA (Fig 3). Along with feed mixers, these three establishment types make up on average 94% of the total samples taken by the NFA per year. The majority of farms are mixed ruminant/non-ruminant as these are classed as the most ‘at risk’ of potential cross-contamination especially if fishmeal is being used in non-ruminant rations. The number of samples taken per year as part of the NFA has reduced from a peak of 17,280 in 2004 to around 5,300 per year since 2011. The probability of a contaminant being detected was not seen to be either decreasing or increasing with time (Fig 4); rather, they were sporadic and isolated events. Therefore, while there are fewer tests, the NFA testing regime itself is not considered less effective at detecting feed samples containing contaminants.

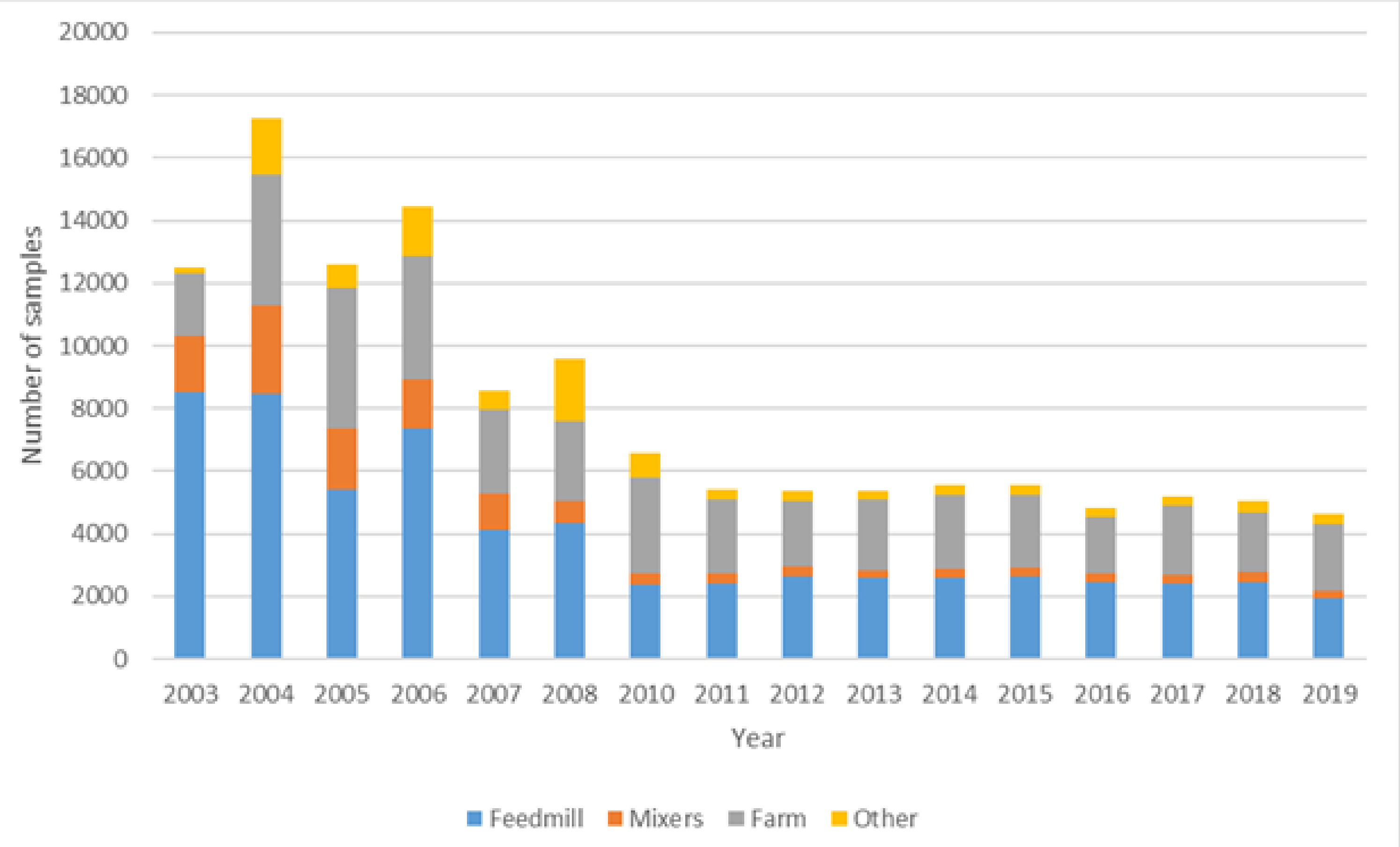


Fig. 3: Number of NFA samples taken in GB per year from feedmills, mixers and farm (‘Other’ includes transporters, feed stores, importers and intermediaries).

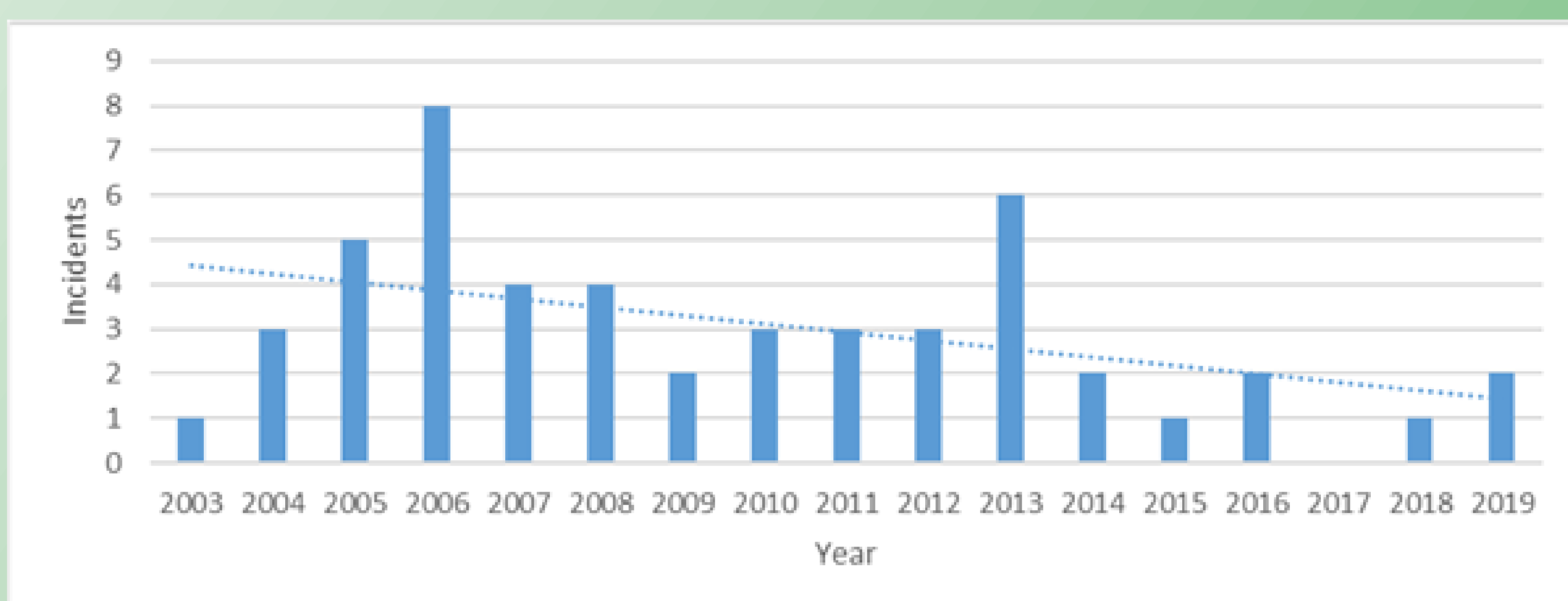


Fig. 4: Incidents where unauthorised material has been detected in livestock feed in GB with fitted linear trend line

Conclusion: The rate of BSE cases in GB cattle being reported has significantly declined since 1988 and currently fluctuates between 0 and 1 cases per year. A key factor behind this success has been the very high level of compliance with BSE-related feed controls throughout the feed manufacture, supply, and livestock industries. The NFA remains an effective scheme for the enforcement of GB feed bans. Suggestions from this review include the identification of critical points within the feed network where cross-contamination could occur, especially in light of the proposed relaxation of certain elements of the feed ban such as feeding of poultry processed animal protein to pigs and vice versa.

References

1) EC, The TSE Roadmap 2. 2010 A Strategy paper on Transmissible Spongiform Encephalopathies for 2010-2015 https://ec.europa.eu/food/system/files/2016-10/biosafety_food-borne-disease_tse_road-map2.pdf