

POST- CHERNOBYL MONITORING AND CONTROLS SURVEY REPORTS

UK OVERVIEW

Introduction

The Food Standards Agency is responsible for ensuring food safety by preventing products with unacceptable levels of radioactivity from entering the foodchain. Due to contamination from the Chernobyl nuclear accident, sheep in certain areas of the UK still contain levels of radioactivity above safety limits. The Agency manages restrictions on the movement of affected sheep to protect consumers.

The Agency's primary concern is ensuring food safety through appropriate maintenance of these controls; however the Agency also seeks to remove controls where these are no longer necessary. To assess the possibility of removing controls, the Agency undertakes targeted surveys of certain sheep farms, where knowledge indicates that levels of radioactivity in sheep have fallen and that there is the potential to remove controls.

The results of the 2007 surveys are reported here. The surveys resulted in two farms in Scotland being de-restricted. No farms in Cumbria were de-restricted and the outbreak of Foot and Mouth Disease in August prevented survey being conducted in Wales.

Background to the Chernobyl accident

In 1986, an accident at the Chernobyl nuclear power plant in the former USSR (now Ukraine) released large quantities of radioactivity into the atmosphere. Some of this radioactivity, predominantly radiocaesium-137, was deposited on certain upland areas of the UK, where sheep farming is the primary land-use. Due to the particular chemical and physical properties of the peaty soil types present in these upland areas, the radiocaesium is still able to pass easily from soil to grass and hence accumulate in sheep.

Food safety controls

To protect consumers, a maximum limit of 1,000 Becquerels per kilogramme (Bq/kg) of radiocaesium is applied to sheep meat affected by the accident. This limit was introduced in the UK in 1986, based on advice from the European Commission's Article 31 Group of experts.

Under powers provided in the Food and Environment Protection Act 1985 (FEPA), Emergency Orders have been used since 1986 to impose restrictions on the movement and sale of sheep exceeding the limit in certain parts of Cumbria, North Wales, Scotland and Northern Ireland. The Emergency Orders define geographical areas, often termed 'Restricted Areas', within which the controls must be followed. Under the FEPA Orders, sheep with levels of contamination above the limit are not

allowed to enter the food chain. Initially these restricted areas were large, but have reduced substantially as levels of radioactivity have fallen, with all restrictions lifted in Northern Ireland in 2000.

Restrictions are maintained upon farms, or part farms, on which the De-Restriction Surveys have shown there exist sheep above the 1,000 Bq/kg safety limit. A management system known as the 'Mark and Release' scheme operates in Restricted Areas. Under this scheme, a farmer wishing to move sheep out of a restricted area can have them monitored to determine the level of radiocaesium.

A live monitoring technique is used, where an external monitor is held against the sheep, giving a count rate (Becquerels per second) which is converted to a concentration (Bq/kg) using a derived conversion factor. To allow for inherent variability in live monitoring results a Working Action Level (WAL) of 645 Bq/kg is applied (rather than 1,000 Bq/kg), which has been set so there is only a 1 in 40 chance of a sheep above the limit giving a monitor reading below the WAL. Any sheep which exceeds the working action level are marked with a dye and are not released from restrictions. Those which pass are allowed to enter the food chain.

From the 1st April 2008, a new monitor has been introduced across the United Kingdom for the use with the live monitoring. The new monitors were purchased in 2007, following two years of field trials. Prior to their introduction, the monitors were calibrated in conjunction with the 2007 De-Restriction Surveys in Cumbria and Scotland, and additional surveys in Wales.

Removal of farms from restrictions

When the Emergency Orders were imposed in 1986, the Restricted Areas were large, covering almost 9,000 farms, and over 4 million sheep. Since 1986, the areas covered by restrictions have dramatically decreased and now cover 369 farms, or part farms, and around 200,000 sheep. This represents a reduction of over 95 per cent since 1986, with only limited areas of Cumbria, South Western Scotland and North Wales covered by restrictions.

A continuous programme of assessing the need for restrictions has been undertaken. Special surveys, termed 'de-restriction surveys', or sometimes 'summer surveys', are performed at farms where it is considered that restrictions may no longer be needed. During these surveys, the whole flock is monitored at the time of year (mainly July and early August) that gives maximum radiocaesium concentrations. Monitoring takes place, where possible, within 24 hours of the sheep being brought down from the hills, to ensure levels of radiocaesium have not started to decline. If the whole flock is below the radiocaesium limit, the farm is considered for removal of restrictions.

These de-restriction surveys are sometimes preceded by more limited surveys of 40 lambs in early summer (typically June) to help determine the suitability of conducting a whole flock survey. These 40 lamb surveys are often referred to as Experimental Surveys.

Controls are either removed from a farm by redefining the restricted area, or by issuing the farm a 'consent', releasing the farm from the terms of the FEPA Order.

Consents are used in situations where redefining the Restricted Area may be difficult, due to local geography.

In Scotland, where restricted farms tend to be either isolated or bounded by stock-proof boundaries, the results of a single year's de-restriction surveys usually enable those flocks with no failures to be de-restricted. In Cumbria and North Wales, most of the restricted farms are within the Lake District and Snowdonian National Parks. Many of the farms are adjacent and do not always have secure stock-proof boundaries. Although flocks are territorial and rarely stray from their own grazing areas, two consecutive years survey results are typically obtained in these areas before de-restriction is considered.

Recent surveys

De-restriction surveys were conducted in Cumbria and Scotland in 2007. The surveys in Scotland resulted in two farms being de-restricted in January 2008. No farms have been removed from restrictions in Cumbria, as most farms continued to have sheep above the Working Action Level. Full reports of each region's survey work for the years cited are attached.

A programme of de-restriction surveys had been planned in Wales for 2007. Unfortunately, it was impossible to conduct these due to the restrictions imposed following the outbreak of Foot and Mouth disease in early August.

It is expected that a combination of experimental surveys and whole flock de-restriction surveys will be conducted in each of the regions in the summer of 2008.

The table below gives a breakdown of the number of sheep and holdings under restrictions per country for 1986, 1990 and 2007.

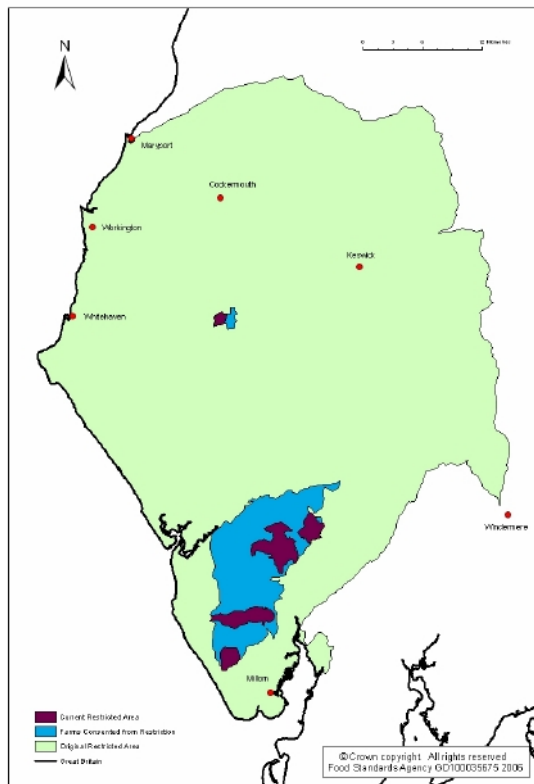
		England	Wales	Scotland	N. Ireland	Total
June 1986	Holdings Sheep	1 670 867 000	5 100 2 000 000	2 144 1 358 000	- -	8914 4 225 000
August 1990	Holdings Sheep	150 170 000	420 300 000	69 124 000	122 53 000	757 647 000
May 2000	Holdings Sheep	9 11,500	359 180,000	19 40,000	0 0	387 231,500
February 2008	Holdings Sheep	9 6 600	355 (359*) 180 000	5 9 900	0 0	369 (373*) 196 500

The areas originally under restriction, and those still covered, are illustrated in the attached maps of Cumbria, Scotland and Wales.

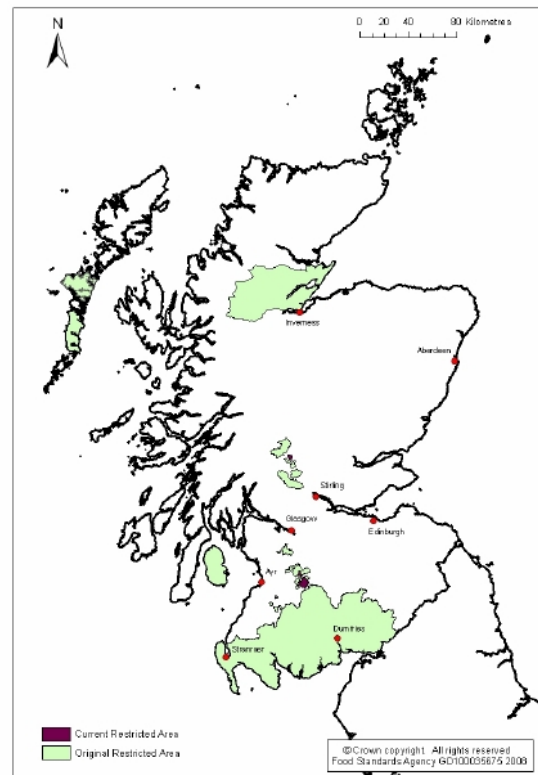
* 359 / 373 include four consented farms in Wales. A 'consent' is the lifting of restriction on sheep movement from a farm in the restricted zone in which all sheep have been shown to have activity concentration levels below the working action level for two consecutive years, but which have no hard defined boundaries. This lack of boundaries means that it is not possible to amend the restriction order and de-restrict the farm. However, a consent allows animals to be moved from the farm without controls.

Areas under post-Chernobyl sheep restrictions

Cumbria, England



Scotland



Wales

