

Indicator 6: Ratio of dairy cow feed production to milk production

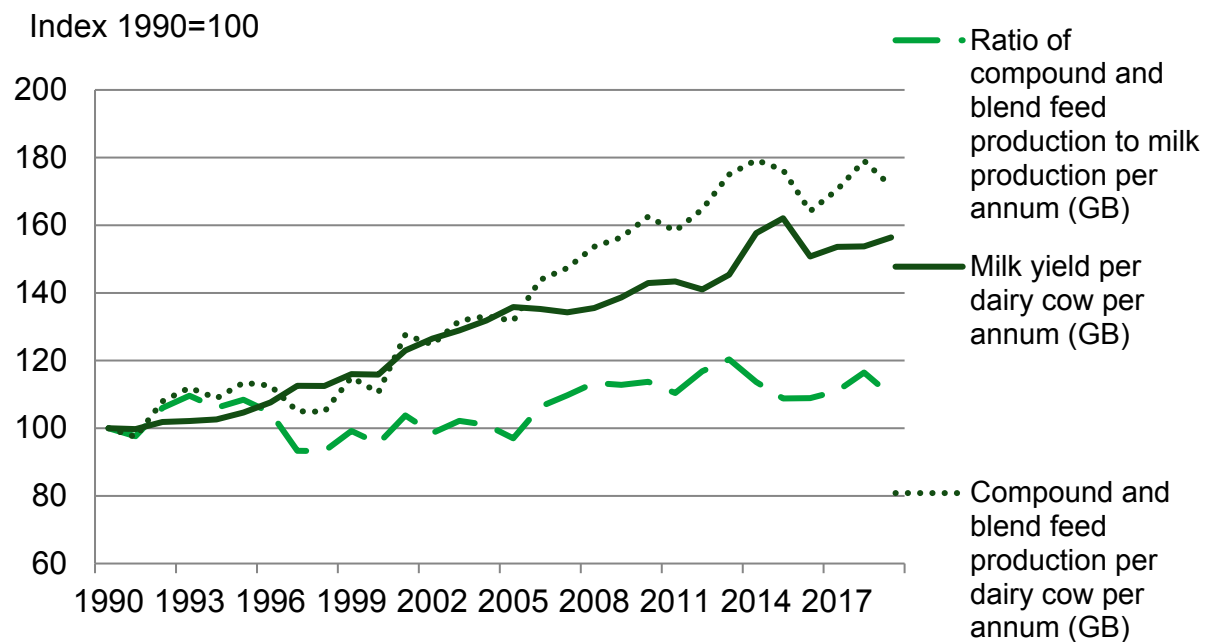
Rationale: using milk yields in conjunction with trends in inputs (such as feed) provides an indication of greenhouse gas (GHG) emissions intensity in the dairy sector. The ratio of dairy cow feed production to milk production is used here as a proxy measure for on-farm GHG emissions intensity.

Indicator: ratio of dairy cow compound and blend feed production to milk production.

Desired outcome: improved emissions intensity through feed efficiency will be demonstrated by increasing/maintained milk yields while dry matter feed inputs remain stable or reduce.

Current status	Long term: (last 10 years) ✓	Short term: (last 2 years) ✗
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Ratio of dairy cow compound and blend feed production to milk production per annum, GB



Source: Defra statistics

Milk yields per dairy cow have increased since 1990. In the longer term the rate of increase of compound and blended feed production outstripped the rate of increase in average milk yields. This produced an overall net reduction in this measure of feed efficiency and hence, an increase in emissions intensity. More recently the ratio has fluctuated, largely mirroring milk yields.

It is important to note that the picture is complex as compound and blended feed production (used within the indicator) is strongly influenced by changes in the availability of on-farm feeds, forages and grazed grass for which data are not currently available.

Data Sources

Until 2015 the indicator used annual (calendar year) milk production data from the administrative milk quota reporting system administered by the Rural Payments Agency adjusted for wastage, milk fed to stock and milk consumed on farm. From 2015 (with the removal of the milk quota) data have been sourced from Defra's quarterly milk volume survey. Data for Scotland are supplied by the Scottish Government. Dairy cow compound and blended feed production data are sourced from Defra's Retail Production of Animal Feed Survey. Annual averages of dairy cow populations used in the contextual components are sourced from the June Agricultural Survey (1990-2004) and the compulsory, administrative Cattle Tracing Scheme (2005 onwards).

We will continue to investigate the use of other data sources to improve this indicator as it is recognised that it is not an ideal indication of overall feeding practices. Firstly, it considers the production of compound and blend feed rather than overall dry matter consumption but, perhaps more importantly, it does not attempt to assess the consumption of concentrates produced by on-farm mixing of raw material feeds or of grazed or conserved forage which form a significant part of the diet of ruminant livestock.

Indicator methodology

The ratio of compound and blended feed production to milk production has been calculated by dividing the total tonnage of compound and blend feed produced in Great Britain for dairy cows by annual milk production in Great Britain.

This indicator and others in the framework that focus on livestock give an insight into the efficiency of production where this can impact on GHG emissions and are intended to be viewed within the context of animal welfare regulations and legislation. In order to examine the wider potential implications of GHG mitigation measures Defra commissioned a research project in 2012 (AC0226¹) to consider the impacts of efficiency measures on a range of areas including animal health and welfare.

Statistical background

Milk Production

Annual milk production is based on data supplied by the Scottish Government and information collected by Defra in a producer survey.

UK data can be found in Chapter 8 (livestock) of [Agriculture in the United Kingdom](#).

Retail Production of Animal Feed Survey

Defra's Retail Production of Animal Feed Survey is a compulsory survey which covers all of the major animal feed producers in Great Britain. The largest producers, typically covering 90% of total animal feed production, are surveyed each month. The remaining smaller companies are surveyed annually in December to provide figures for the preceding 12 months. Monthly results include estimates for the smaller companies until annual responses are received. The accuracy of the survey results is very high as they are based on a census of all companies with a typical response rate of 100% per year.

Full methodological details can be found on the animal feed [website](#).

June Agricultural Survey

Defra's June Agricultural Survey is an annual postal survey collecting detailed information on arable and horticultural cropping activities, land usage, livestock populations and labour force figures. The survey is compulsory with samples sizes varying between 30,000 and 70,000 holdings each year, dependent on EU requirements. A full Census is carried out once every ten years with 2010 being the most recent. Since 2007, cattle numbers have not been collected from farmers within the June Survey. Instead populations for each farm are taken directly from the compulsory administrative Cattle Tracing System (CTS).

Full methodological details can be found on the June survey [website](#).

Both the June Agricultural Survey and Retail Production of Animal Feed Survey are designated National Statistics. These are official statistics which have been assessed and comply with the National Statistics code of practice.

¹ Quantifying, monitoring and minimising wider impacts of GHG mitigation measures – AC0226

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=17780&FromSearch=Y&Publisher=1&SearchText=AC0226&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description>