

Indicator 7: Poultry sector – feed conversion ratio

Rationale: more efficient use of feed has the potential to increase productivity and reduce greenhouse gas (GHG) intensity. The feed conversion ratio is a measure of the amount of feed required (in kilogrammes) to produce one kilogramme of poultrymeat (dressed carcass weight). It is used here as a proxy measure for the intensity of on-farm GHG emissions.

Indicator: quantity of poultry feed produced per kilogramme (kg) of poultrymeat produced.

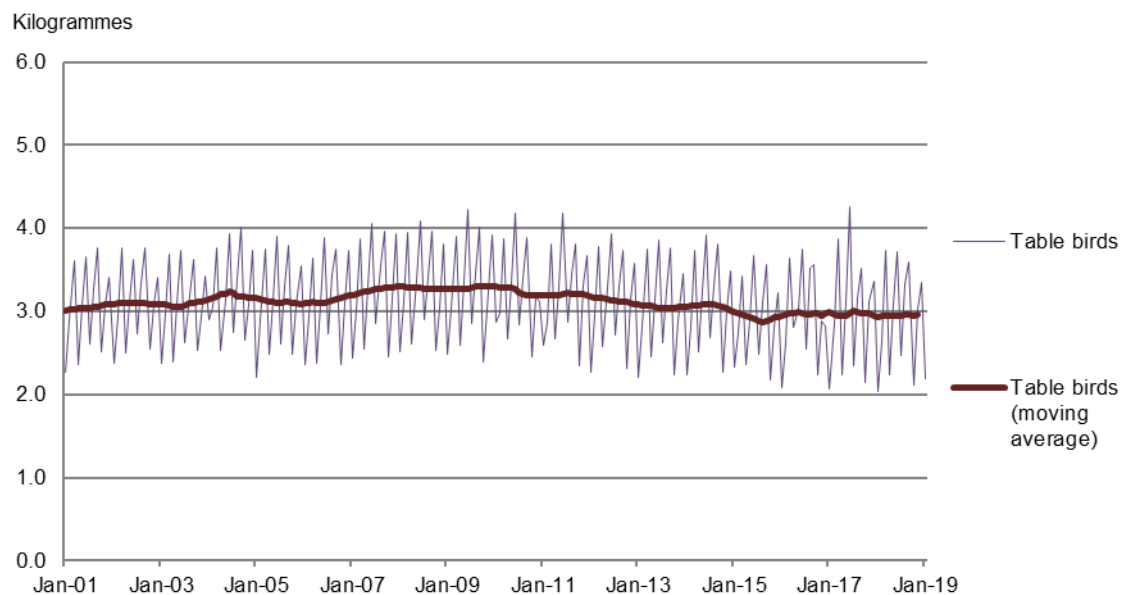
Desired outcome: increasing feed efficiency (and hence a reduction in GHG intensity) will be demonstrated by a reduction in the quantity of feed produced per kg of meat produced while carcass weights are improved / maintained.

Current status

Long term: (last 10 years) ✓

Short term: (2 years) ≈

Kilogrammes of feed per kilogramme of poultrymeat, GB



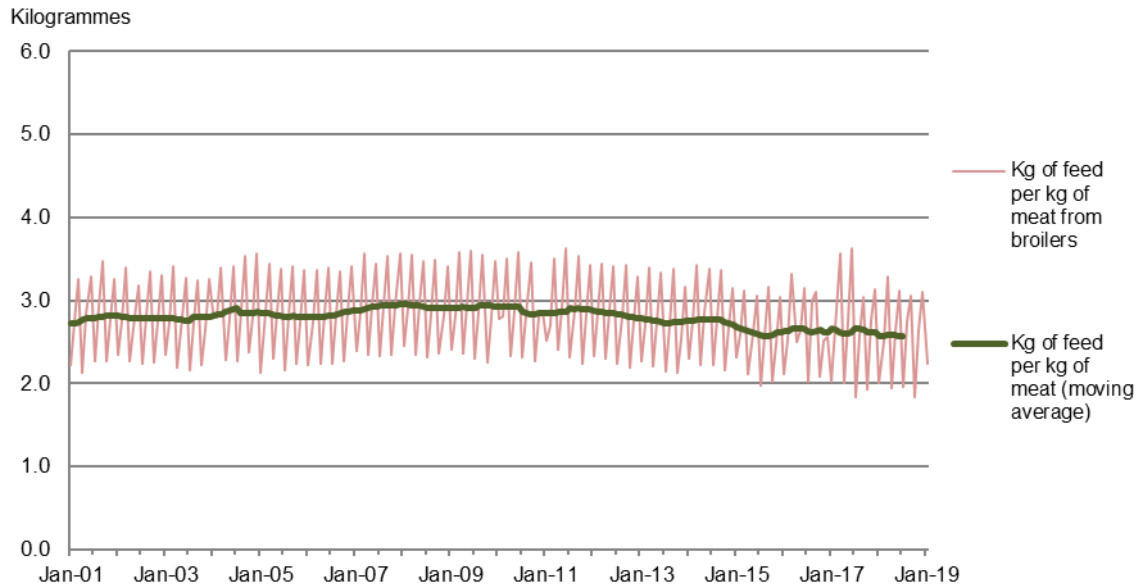
Source: Defra, Hatcheries and Poultry Slaughterhouse Surveys, Integrated Poultry Unit Survey

There was a slight upward trend overall in the feed conversion ratio (FCR) between 2001 and 2008, suggesting a possible increase in GHG emissions intensity. However, there was some improvement between 2010 and 2013 whilst over the last two years the moving average remained at a similar level.

The indicator provides an overall measure of feed efficiency, within this there are differences between production systems and species. The following charts separately illustrate the FCRs for broilers (chickens bred and raised specifically for meat production) and turkeys. Data are not available to determine FCRs for differing production systems.

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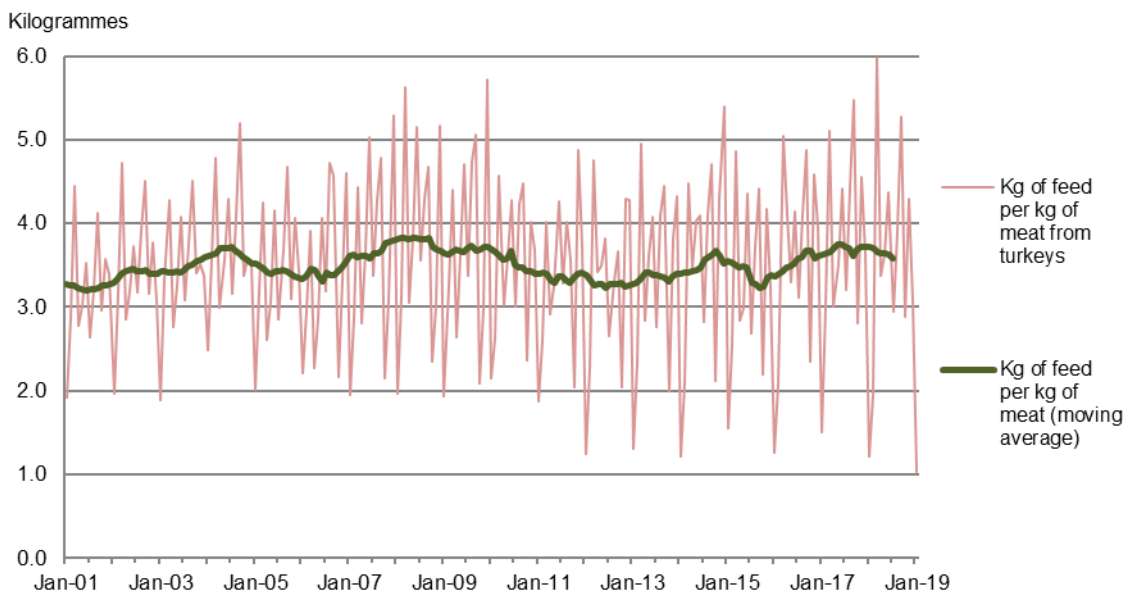
Broilers: kilogrammes of feed per kilogramme of meat, GB



Source: Defra, Hatcheries and Poultry Slaughterhouse Surveys, Integrated Poultry Unit Survey

The average FCR for broilers is consistently lower than for all poultrymeat, but follows a similar trend. Within this, there will be variations between different rearing systems, such as indoor rearing and organic production. In addition, some birds are reared to an older age (and have a higher resulting FCR) as a deliberate marketing choice.

Turkeys: kilogrammes of feed per kilogramme of meat, GB



Source: Defra, Hatcheries and Poultry Slaughterhouse Surveys, Integrated Poultry Unit Survey

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The average turkey FCR is higher than that for chickens but follows a broadly similar trend, albeit more exaggerated. The trend has fluctuated over the period although overall not changed significantly. Over the last two years the average liveweight at slaughter has remained at the same weight.

Data sources

The indicator uses data on poultrymeat production derived from Defra's Poultry Slaughterhouse and Hatcheries Surveys. Data on feed production are sourced from the Retail Production of Animal Feedingstuffs Survey and the Integrated Poultry Units Survey, both conducted by Defra.

Indicator methodology

The FCR has been calculated as the ratio of the weight of poultry feed produced (excluding feed for layers and the rearing and breeding flock) in Great Britain to the weight of poultry meat (excluding boilers) produced in terms of dressed carcase weight net of offal. The FCR is more usually expressed on a live weight basis. For poultry, dressed carcase weight is approximately 75% of the live weight, this therefore gives a higher ratio of feed per kilogramme of meat produced but does not affect the trajectory of the overall trend.

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 (project AC0226¹) which considers the impacts of efficiency measures on a range of areas including animal health and welfare.

Statistical background

Retail Production of Animal Feed

Defra's Retail Production of Animal Feed Survey which covers all 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 and the typical response rate is 100%. Further methodological details can be found at: <https://www.gov.uk/government/statistics/animal-feed-production>

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&Page=10#Description>

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Hatcheries Survey

Defra's monthly survey of registered hatcheries in England and Wales is a statutory survey of 42 respondents that collects information on the number of eggs set and the chicks placed by hatcheries. The survey response rate is typically 100%. A similar survey is run in Scotland. Survey data are subject to a variety of validation checks which identify inconsistencies in the data and all data are validated prior to publication in discussion with the survey respondents. The chick placings data are used within a model to estimate poultrymeat production.

Poultry Slaughterhouse Survey

This is a survey of large poultry slaughterhouses in England and Wales with around 28 respondents. Average liveweights are collected for each type of poultry. A similar survey is run in Scotland. Meat production is calculated using a model based on chick placings (see above), day old chick imports and mortality rates combined with the average live weights from this survey. The liveweight is converted to carcass weight using industry advice on conversion factors.

Further methodological details can be found at:

<https://www.gov.uk/government/statistics/poultry-and-poultry-meat-statistics>

Poultry Feed Production by Integrated Poultry Units Survey

This voluntary Defra survey of all of the major GB poultry feed manufacturers of integrated poultry units. Data on raw material use, stocks and production of the various categories of poultry feed are collected. The accuracy of the results is very high as they are based on a census carried out across all companies. The typical response rate is 100% per year.

Further methodological details can be found at:

<https://www.gov.uk/government/statistics/animal-feed-production>

All the source surveys are designated National Statistics. These are official statistics which have been assessed and comply with the National Statistics code of practice.