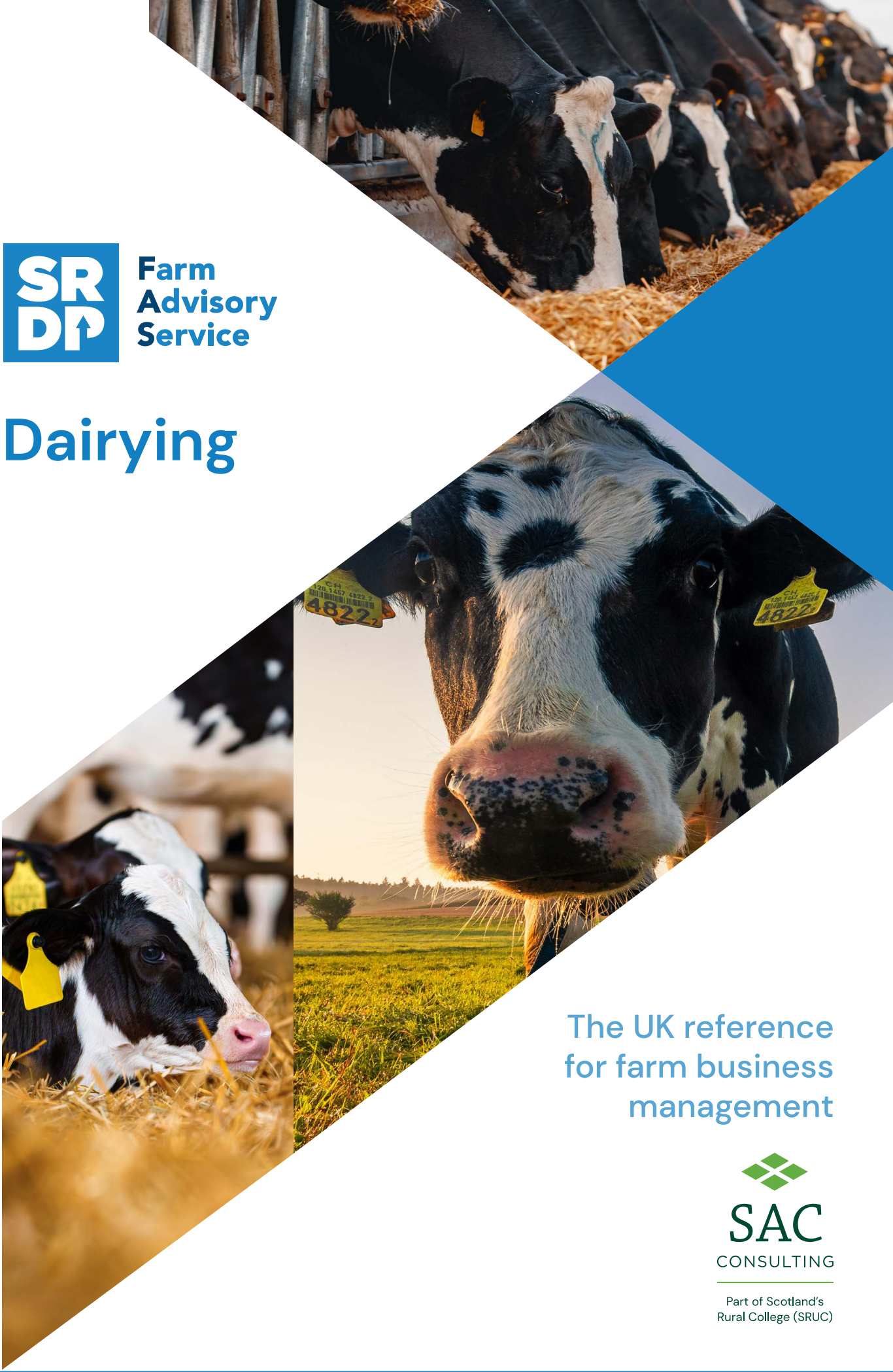
The Farm Management Handbook

Farm Advisory Service

# Dairying



The UK reference for farm business management

SAC CONSULTING

Part of Scotland's Rural College (SRUC)

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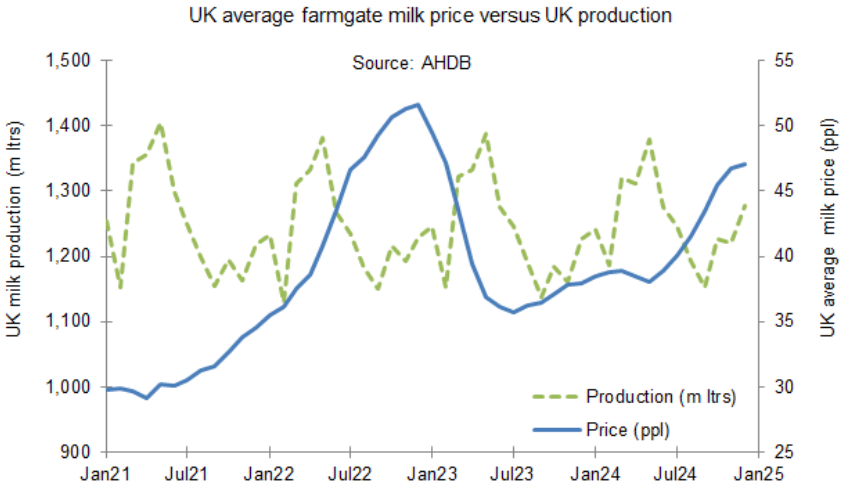
# Introduction

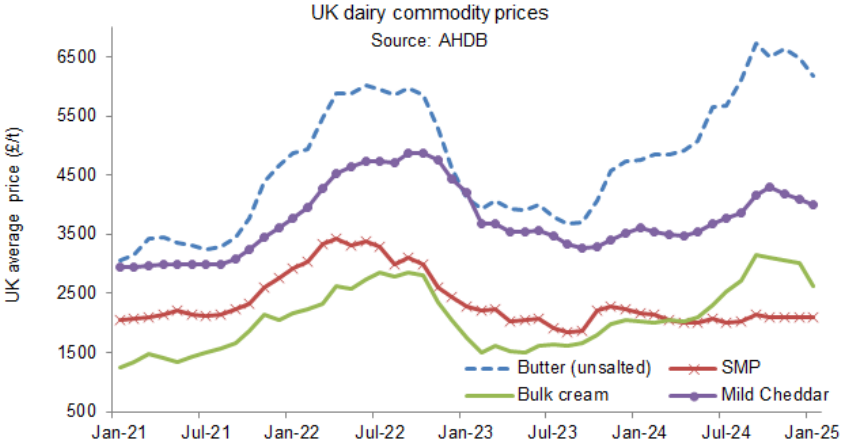
## Farm-gate milk prices and price drivers

The UK average farm-gate milk price has risen steadily throughout May to December 2024, from 38.03ppl in May to 47.09ppl in December, a rise of 9.06ppl.. Throughout the first five months of the 2024/25 milk year, UK milk production was below the previous year on the back of a very wet spring, with cold weather lasting well into June. The late spring turnout and poorer grass growth than normal meant a less pronounced spring flush, helping keep milk prices firm and rising into the summer months. From September onwards, improved grazing conditions and grass quality, along with easing of feed prices and higher milk prices helped boost production, along with more autumn calving cows. UK production for November was 5.3% up on the previous year and the forecast from AHDB is for GB production to reach 12.43 billion litres, 0.9% more than the 2023/24 milk year. As volume has been increasing, milk prices have started to steadied up, with most of the Scottish milk buyers holding their price at the start of 2025.




The UK farm-gate milk price is mainly driven by the commodities market. Dairy fats (butter and cream) have increased significantly in price over the first six months of the 2024/25 milk year, reaching record highs in September on the back of low milk volumes, seasonally low butterfat in the spring and summer months and increasing demand both in the UK and on the continent. During this period butter increased from £4,910/t in April 2024 to £6,730/t in September 2024. Cream has followed the butter trend, from a low of £2,307/t in April to a high of £3,147/t in September. The market for cheddar also increased, although didn't see as much of a percentage rise compared to the fats. Mild cheddar rose £830/t from April, reaching £a high of 4,300/t in October. The skim milk powder

(SMP) price has remained steady, only fluctuating by £150/t since the start of the 2024/25 milk year, again peaking in September at £2,150/t. The increase in commodity prices in this milk year has come on the back of poor milk volumes in the UK and EU, with increased demand for butter and cream. With a good export market for domestic cream, processors were opting to sell cream, rather than going to the expense of churning it into butter, further tightening stocks.




The latest global milk deliveries data from AHDB for October 2024 were 0.85% above the same month in 2023, with average daily deliveries of 828.4million litres. Five out of the six key exporting regions (EU, UK, US, New Zealand and Australia) had production growth, apart from Argentina, which was back 0.4% due to drought conditions. Milk volumes in New Zealand are currently reported to be exceptional this season due to good grass growth and quality, with volume up 2.1% compared to the previous October. EU milk volumes are showing a similar trend to the UK, having got off to a poor start last spring, but volumes are now ahead of last year (October 2024 data was 0.6% up on the same month in 2023).

**Milk supply contracts**

All UK dairy farmers are contracted to supply milk to an individual milk purchaser/processor. A select number of dairy farmers are on retailer-aligned contracts. Farmers on these contracts receive a milk price based on a cost of production formula used by the individual retailer. As of January 2025, aligned milk contracts were in the region of 40ppl–41ppl for a liquid standard litre. The majority of non-aligned farm-gate milk prices are in the region of 40ppl-46.58ppl for a liquid standard litre, based on 4% butterfat and 3.3% protein .

The price paid for milk sold for manufacturing purposes places more emphasis on compositional quality, with a standard manufacturing litre being based on 4.2% butterfat and 3.4% protein. These contracts

typically pay around 1.3ppl more than the liquid standard litre. Depending on the contract, bonuses and penalties are awarded with milk composition and hygiene quality being either above or below the standard litre respectively. For hygiene quality, a standard litre is based on a bactoscan of 30,000/ml, somatic cell count (SCC) of 200,000/ml and thermodurics of 500/ml.

Additional bonuses for milk collections may include every other day collections, volume bonuses and flexible collection times.

**Milk contract legislation**

The Fair Dealing Obligations (Milk) Regulations 2024 came into force in the UK on 9th July 2024. This new regulation aims to promote fairness in the supply chain and ensures that all contracts between producers and processors are clear and fair and that both parties know their rights and responsibilities. As a minimum, all contracts must include information on the following areas:

- Clear terms around pricing mechanisms.
- Prohibition of unilateral changes.
- Clear terms on the length of milk purchase contracts and termination.
- A dispute resolution mechanism.
- An express term that requires the purchaser to act in good faith in relation to the contract.

The Agricultural Supply Chain Adjudicator (ASCA) is there to enforce the regulations and resolve any disputes between producer and processor. From the 9th July 2024, all new contracts issued must be compliant with the legislation and all existing contracts must be compliant by 9th July 2025.

**Fixed price contracts**

From time to time, some milk purchasers offer fixed contracts, allowing producers to fix a certain proportion of their milk volume at a given price for a period of time. 'Futures contracts' allow farmers to reduce their exposure to market volatility with regards milk price and to plan ahead with purchasing key inputs such as feed and fertiliser. Futures broker StoneX Group Inc. calculates regular forward milk prices based on European milk futures contracts and currency exchange rates.

**Cost of production**

For the 2024/25 year, independent consultants The Dairy Group, estimate the cost of production at 44.2ppl, back 0.8ppl on the previous year as a result of lower feed costs. The forecast is for a small profit of 0.5ppl after family labour. However, they also highlighted almost a 9ppl difference in the cost of production between the top 25% of producers compared to the average. Despite variable costs easing over the last two years, fixed costs have continued to increase with higher labour costs,

interest rates, and inflation. Margins have also been under pressure where dairy farm businesses have had to make further investment to comply with NVZ regulations and slurry storage.

**Outlook**

Domestic milk production (for GB) is predicted to reach 12.43 billion litres for the 2024/25 season, which is 0.9% higher than 2023/24 (AHDB Dairy). While farmgate prices have been rising throughout the second half of 2024, input costs are still at historically high levels, despite a more favourable milk price to feed price ratio which has helped stimulate production..

The majority of Scottish processors have held their December milk price for January and February and so as milk production starts its seasonal increase heading towards the spring flush, it is likely that we have seen the last of the milk price rises for a while. Aside from domestic milk volumes, our market is sensitive to many other factors: global milk output, geopolitical events, disease and weather will always impact production and trade.

According to Rabobank's latest forecast, global milk production is set to increase by 0.8% in 2025, with the main driver being better margins with improved farm-gate milk prices and lower feed costs compared to 12 months ago. Global demand is thought to be mixed depending on economic pressures. However, Chinese demand for exports is expected to increase by 2% in 2025 in response to a slowdown in their domestic milk production. It is estimated to decline 1.5% in 2025, on the back of falling milk prices and heat stress in quarter three last year leading to more farmers ceasing production.

Bluetongue in the EU and avian influenza in the US could affect herd numbers and milk output but there is confidence that vaccines will limit production impacts. The new Trump administration could affect markets if new tariffs disrupt the flow of trade and there is the risk of less labour on US farms if the threat of mass deportations are realised.

## Lactation Curves

The table below is an example of a lactation curve for a cow yielding 7,000 litres and can be used for budgeting purposes.

**LACTATION CURVES** - % Yield each month for a cow yielding 7,000 litres

| | Month of calving | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Month** | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** |
| January | 12.3 | - | - | 4.7 | 6.4 | 7.4 | 8.5 | 9.6 | 10.6 | 11.8 | 12.9 | 13.4 |
| February | 12.0 | 11.0 | - | - | 4.5 | 5.9 | 6.8 | 7.7 | 8.6 | 9.7 | 10.8 | 11.6 |
| March | 13.0 | 13.5 | 12.4 | - | - | 5.3 | 6.8 | 7.7 | 8.6 | 9.8 | 10.9 | 12.0 |
| April | 11.9 | 12.8 | 13.4 | 12.4 | - | - | 5.3 | 6.7 | 7.6 | 8.6 | 9.8 | 10.8 |
| May | 12.1 | 13.2 | 14.3 | 15.1 | 14.1 | - | - | 6.0 | 7.5 | 8.6 | 9.7 | 10.8 |
| June | 10.4 | 11.7 | 12.8 | 13.8 | 14.6 | 13.8 | - | - | 6.0 | 7.3 | 8.3 | 9.4 |
| July | 8.7 | 9.9 | 11.0 | 12.0 | 13.2 | 14.1 | 13.1 | - | - | 5.5 | 6.9 | 7.9 |
| August | 7.5 | 8.5 | 9.4 | 10.6 | 11.7 | 13.0 | 13.9 | 12.8 | - | - | 5.3 | 6.6 |
| September | 6.7 | 7.5 | 8.4 | 9.5 | 10.8 | 12.0 | 13.4 | 13.9 | 12.8 | - | - | 5.3 |
| October | 5.4 | 6.8 | 7.6 | 8.6 | 9.7 | 11.2 | 12.5 | 13.6 | 14.2 | 13.1 | - | - |
| November | - | 5.1 | 6.1 | 7.0 | 7.9 | 9.1 | 10.3 | 11.5 | 12.5 | 13.0 | 12.1 | - |
| December | - | - | 4.6 | 6.3 | 7.1 | 8.2 | 9.4 | 10.5 | 11.6 | 12.6 | 13.3 | 12.2 |
| | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

These figures are broadly applicable to other yield levels.

It should be noted that the figures are intended only as a general guide and that annual yield, milking frequency, lactation number, calving index, feeding regime and geographical area will all affect the actual curve obtained.

## Dairy Cow - Summary of Assumptions

**(a) Milk Price 2024**

The following gross margins include four annual yield levels, based on average production of 1,000,000 litres per annum:

| Litres /cow | Calving system | Contract type | Average price (ppl) * |
|---|---|---|---|
| 5,000 | Spring | Manufacturing | 43.0 |
| 7,000 | All year round | Manufacturing | 43.0 |
| 8,500 | All year round | Liquid | 42.0 |
| 10,000 | All year round | Liquid | 42.0 |

* Use price sensitivity to change gross margins to reflect current milk price.

Note that calving system and contract type are not specific to average yield per cow and it is not unusual for higher yielding herds to be on manufacturing contracts. Similarly, block calving herds (whether spring or autumn or both, are capable of much higher yields than 5,000 litres).

**(b) Feeding**

The systems shown are all based on a grass silage feeding regime. As milk yield increases, forage quality becomes more critical. Although high milk yields can be achieved using conventional systems based on grass, grass silage and concentrates, the inclusion of a second forage, such as a wholecrop cereal or maize silage, will normally enhance intake and performance as will forage replacers such as draff or grainbeet along with other distillery by-products, fodder beet and potatoes. To avoid excessive concentrate use (target concentrate use per litre should be less than 0.4kg), good grassland management and well-preserved grass silage with high intake characteristics are key. Multi-cut silage, with 4 or 5 cuts/year can improve forage quality and reduce demand for purchased concentrates and protein sources.

Many different feeding systems exist. A TMR (Total Mixed Ration) is where cows receive 100% of their nutrition in a mixed ration fed in the feed trough. PMR (Partial Mixed Ration) is where cows are fed a base ration with additional concentrates fed at a rate depending on their level of milk production. Typically, feeding to yield is based on providing 0.45kg concentrate per litre over the base ration through the parlour, robot or out of parlour feeders.

Dairy farmers can replace part or all the purchased compound dairy cake or blends with home mixes using home-grown cereals and purchased straights. These mixes typically cost around £20/t less than purchased product, but they do, however, incur greater demand on labour and machinery and require more storage

capacity.

**(c) Other livestock expenses**

These are based on commercial dairy herds and include milk recording, sawdust, dairy detergents, and feeding straw.

## Dairy Cow - Spring Block Calving

### PHYSICAL DATA

| Calving period | Spring<br>**/cow** |
|---|---|
| Average annual yield (litres) | 5,000 |
| Herd life (years) | 5.0 |
| Calving interval (days) | 370 |
| Cow size (kg) | 500 |
| | |
| Feed requirements (kg): | |
| Silage | 5,500 |
| Concentrates | 750 |
| Concentrates fed (kg/litre) | 0.15 |
| Overall forage area (ha): | |
| Silage & aftermath grazing | 0.11 |
| Grazing | 0.33 |
| Total | 0.44 |

*Basis of data:*

1. A spring calving herd managed on a low input system. Calving between February and April. Maximum utilisation of grazed grass - 150 days winter feeding period.
2. A herd of 200 cows producing 1 million litres, assumed at 4.4% BF and 3.5% Protein.
3. The dry cow diet includes 165kg feeding straw (based on an inclusion of 3kg/hd/day over a 55 day dry period).
4. Calf sale/transfer value is an average of dairy heifers, males and beef cross calves at £164.75/hd then adjusted for calving interval and mortality. The calf value can be altered by £9.27 for each £10 difference in the sale/transfer price.
5. Cull cow sale price of £686.25/hd has been adjusted for herd life and mortality. The annual share can be altered by £1.95 for each £10 difference in cull cow price.
6. Heifer purchase/transfer price varies according to yield. A purchase price equating to 18ppl has been used. This has been adjusted for herd life and mortality. The annual share can be altered by £2.08 for each £10 difference in purchase/transfer price.

## Dairy Cow - Spring Block Calving

GROSS MARGIN DATA

| Calving period | Spring /cow |
|---|---|
| Average annual yield (litres) | 5,000 |
| OUTPUT | |
| Spring milk @ 43 p/litre | 2,150 |
| Calf value | 187 |
| Cull cow (annual share) | 137 |
| | 2,474 |
| Heifer replacement (annual share) | 187 |
| | 2,287 |
| VARIABLE COSTS | |
| Concentrates @ £300/t | 225 |
| AI | 50 |
| Vet & medicines | 55 |
| Other livestock expenses | 103 |
| | 433 |
| Gross Margin before forage | 1,854 |
| Forage variable costs: | |
| silage @ £634/ha | 70 |
| grazing @ £353/ha | 116 |
| Total Variable Costs | 619 |
| GROSS MARGIN £/cow | 1,668 |
| GROSS MARGIN £/forage ha | 3,791 |

| **Sensitivity-Change ±** | **Change in Gross Margin/head (£)** |
|---|---|
| 1 p/litre in milk price | 50 |
| £10/t in concentrate price | 8 |

## Dairy Cow – Moderate Input

### PHYSICAL DATA

| | |
|---|---|
| Calving period | All year |
| | **/cow** |
| Average annual yield (litres) | 7,000 |
| Herd life (years) | 4.2 |
| Calving interval (days) | 380 |
| Cow size (kg) | 600 |
| | |
| Feed requirements (kg): | |
| Silage | 8,700 |
| Concentrates | 1,800 |
| Concentrates fed (kg/litre) | 0.26 |
| Overall forage area (ha): | |
| Silage & aftermath grazing | 0.17 |
| Grazing | 0.24 |
| Total | 0.41 |

*Basis of data:*

1. A moderate input system calving all year round; 200 days winter feeding period with cows at grass day and night during the grazing period.
2. A herd of 143 cows producing 1 million litres, assumed at 4.2% BF and 3.4% Protein.
3. The dry cow diet includes 115kg feeding straw (based on an inclusion of 3kg/hd/day over a 52 day dry period).
4. Calf sale/transfer value is an average of dairy heifers, males and beef cross calves at £166.00/hd then adjusted for calving interval and mortality. The calf value can be altered by £8.93 for each £10 difference in the sale/transfer price.
5. Cull cow sale price of £823.50/hd has been adjusted for herd life and mortality. The annual share can be altered by £2.34 for each £10 difference in cull cow price.
6. Heifer purchase/transfer price varies according to yield. A purchase price equating to 18ppl has been used. This has been adjusted for herd life and mortality. The annual share can be altered by £2.50 for each £10 difference in purchase/transfer price.

## Dairy Cow – Moderate Input

GROSS MARGIN DATA

| Calving period | All year |
|---|---|
| | **/cow** |
| Average annual yield (litres) | 7,000 |
| OUTPUT | |
| All year milk @ 43 p/litre | 3,010 |
| Calf value | 181 |
| Cull cow (annual share) | 197 |
| | 3,388 |
| Heifer replacement (annual share) | 314 |
| | 3,074 |
| VARIABLE COSTS | |
| Concentrates @ £300/t | 540 |
| AI | 55 |
| Vet & medicines | 89 |
| Other livestock expenses | 103 |
| | 787 |
| Gross Margin before forage | 2,287 |
| Forage variable costs: | |
| silage @ £634/ha | 108 |
| grazing @ £353/ha | 85 |
| Total Variable Costs | 980 |
| GROSS MARGIN £/cow | 2,094 |
| GROSS MARGIN £/forage ha | 5,107 |

| **Sensitivity-Change ±** | **Change in Gross Margin/head (£)** |
|---|---|
| 1 p/litre in milk price | 70 |
| £10/t in concentrate price | 18 |

## Dairy Cow – Moderate/High Output

### PHYSICAL DATA

| Calving period | All year |
|---|---|
| | **/cow** |
| Average annual yield (litres) | 8,500 |
| Herd life (years) | 3.6 |
| Calving interval (days) | 390 |
| Cow size (kg) | 650 |
| | |
| Feed requirements (kg): | |
| Silage | 11,200 |
| Concentrates | 2,800 |
| Concentrates fed (kg/litre) | 0.33 |
| Overall forage area (ha): | |
| Silage & aftermath grazing | 0.22 |
| Grazing | 0.24 |
| Total | 0.46 |

*Basis of data:*

1. A moderate input system calving all year round; 230 days winter feeding period. During the grazing period cows are housed at night and grazed during the day.
2. A herd of 118 cows producing 1 million litres assumed at 4.1% BF and 3.3% Protein.
3. The dry cow diet includes 160kg feeding straw (based on an inclusion of 4kg/hd/day over a 51 day dry period.
4. Calf sale/transfer value is an average of dairy heifers, males and beef cross calves at £203/hd then adjusted for calving interval and mortality. The calf value can be altered by £8.70 for each £10 difference in the sale/transfer price.
5. Cull cow sale price of £785/hd has been adjusted for herd life and mortality. The annual share can be altered by £2.71 for each £10 difference in cull cow price.
6. Heifer purchase/transfer price varies according to yield. A purchase price equating to 18ppl has been used. This has been adjusted for herd life and mortality. The annual share can be altered by £2.94 for each £10 difference in purchase/transfer price.

## Dairy Cow – Moderate/High Output

GROSS MARGIN DATA

| Calving period | All year /cow |
|---|---|
| Average annual yield (litres) | 8,500 |
| OUTPUT | |
| All year milk @ 42 p/litre | 3,570 |
| Calf value | 135 |
| Cull cow (annual share) | 220 |
| | 3,925 |
| Heifer replacement (annual share) | 450 |
| | 3,475 |
| VARIABLE COSTS | |
| Concentrates @ £300/t | 840 |
| AI | 65 |
| Vet & medicines | 108 |
| Other livestock expenses | 119 |
| | 1,132 |
| Gross Margin before forage | 2,343 |
| Forage variable costs: | |
| silage @ £634/ha | 139 |
| grazing @ £353/ha | 85 |
| Total Variable Costs | 1,356 |
| GROSS MARGIN £/cow | 2,119 |
| GROSS MARGIN £/forage ha | 4,607 |

| **Sensitivity-Change ±** | **Change in Gross Margin/head (£)** |
|---|---|
| 1 p/litre in milk price | 85 |
| £10/t in concentrate price | 28 |

## Dairy Cow - High Output

### PHYSICAL DATA

| Calving period | All year **/cow** |
|---|---|
| Average annual yield (litres) | 10,000 |
| Herd life (years) | 3.0 |
| Calving interval (days) | 400 |
| Cow size (kg) | 650 |
| | |
| Feed requirements (kg): | |
| Silage | 12,600 |
| Concentrates | 3,800 |
| Concentrates fed (kg/litre) | 0.38 |
| Overall forage area (ha): | |
| Silage & aftermath grazing | 0.24 |
| Grazing | 0.00 |
| Total | 0.24 |

*Basis of data:*

1. A high input, high output system calving all year round and housed for 365 days on a complete winter ration (assumes no access to grass or zero grazing).
2. A herd of 100 cows producing 1 million litres assumed at 4.0% BF and 3.2% Protein.
3. The dry cow diet includes 245kg feeding straw (based on an inclusion of 5kg/hd/day over a 49 day dry period).
4. Calf sale/transfer value is an average of dairy heifers, males and beef cross calves at £213/hd then adjusted for calving interval and mortality. The calf value can be altered by £8.49 for each £10 difference in the sale/transfer price.
5. Cull cow sale price of £785.07/hd has been adjusted for herd life and mortality. The annual share can be altered by £3.11 for each £10 difference in cull cow price.
6. Heifer purchase/transfer price varies according to yield. A purchase price equating to 18ppl has been used. This has been adjusted for herd life and mortality. The annual share can be altered by £3.15 for each £10 difference in purchase/transfer price.

## Dairy Cow - High Output

GROSS MARGIN DATA

| Calving period | All year **/cow** |
|---|---|
| Average annual yield (litres) | 10,000 |
| OUTPUT | |
| All year milk @ 42 p/litre | 4,200 |
| Calf value | 207 |
| Cull cow (annual share) | 262 |
| | 4,669 |
| Heifer replacement (annual share) | 567 |
| | 4,102 |
| VARIABLE COSTS | |
| Concentrates @ £300/t | 1,140 |
| AI | 71 |
| Vet & medicines | 127 |
| Other livestock expenses | 136 |
| | 1,475 |
| Gross Margin before forage | 2,627 |
| Forage variable costs: | |
| silage @ £634/ha | 152 |
| grazing @ £353/ha | - |
| Total Variable Costs | 1,627 |
| GROSS MARGIN £/cow | 2,475 |
| GROSS MARGIN £/forage ha | 10,313 |

| **Sensitivity-Change ±** | **Change in Gross Margin/head (£)** |
|---|---|
| 1 p/litre in milk price | 100 |
| £10/t in concentrate price | 38 |

# Replacement Heifer Rearing

**Fodder requirements of Holstein Friesian heifers**

The following tables provide forage data to budget for the cost of replacement heifers.

| | | Approx. closing lwt (kg) | Heifer grazing (days) | Mainly silage ration Conc (kg) | Straw (kg) | Silage (kg) |
|---|---|---|---|---|---|---|
| ***Early autumn*** | | | | | | |
| **(1st Sept)/24 months** | | | | | | |
| Birth | | 40 | - | - | - | - |
| 0-3 | S-N | 110 | - | 140 | 45 | - |
| 4-8 | D-A | 220 | - | 410 | 135 | 800 |
| 9-14 | My-O | 355 | 123 | 125 | - | 1,160 |
| 15-20 | N-A | 490 | - | 275 | - | 4,290 |
| 21-24 | My-A | 585 | 102 | 42 | 85 | 440 |
| Total | | | 225 | 992 | 265 | 6,690 |
| | **Forage (ha)** | | 0.21 | - | - | 0.13 |
| ***Early spring*** | | | | | | |
| **(1st April)/24 months** | | | | | | |
| Birth | | 40 | - | - | - | - |
| 0-3 | A-J | 110 | - | 140 | 45 | - |
| 4-8 | J-N | 220 | - | 415 | 140 | 800 |
| 9-14 | D-My | 355 | - | 275 | - | 3,150 |
| 15-20 | J-N | 490 | 61 | 185 | - | 2,890 |
| 21-24 | D-M | 585 | - | 205 | 170 | 2,910 |
| Total | | | 61 | 1,220 | 355 | 9,750 |
| | **Forage (ha)** | | 0.06 | - | - | 0.19 |

| | | Approx. closing lwt (kg) | Heifer grazing (days) | Mainly silage ration Conc (kg) | Straw (kg) | Silage (kg) |
|---|---|---|---|---|---|---|
| ***Early autumn*** | | | | | | |
| **(1st Sept)/27 months** | | | | | | |
| Birth | | 40 | - | - | - | - |
| 0-3 | S-N | 100 | - | 170 | 45 | - |
| 4-8 | D-A | 205 | - | 330 | 180 | 820 |
| 9-14 | My-O | 335 | 153 | 47 | - | 560 |
| 15-20 | N-A | 455 | - | 275 | - | 4,100 |
| 21-27 | My-N | 600 | 153 | 60 | 185 | 1,735 |
| Total | | - | 306 | 882 | 410 | 7,215 |
| | **Forage (ha)** | | 0.29 | - | - | 0.18 |
| ***Early spring*** | | | | | | |
| **(1st April)/27 months** | | | | | | |
| Birth | | 40 | | - | - | |
| 0-3 | A-J | 100 | - | 170 | 45 | - |
| 4-8 | J-N | 205 | - | 335 | 185 | 820 |
| 9-14 | D-My | 335 | 50 | 200 | - | 1,980 |
| 15-20 | J-N | 455 | 122 | 60 | - | 1,630 |
| 21-27 | D-M | 600 | 60 | 155 | 63 | 4,565 |
| Total | | | 232 | 920 | 293 | 8,995 |
| | **Forage (ha)** | | 0.23 | - | - | 0.22 |

## Replacement Heifer Rearing

PHYSICAL DATA

| **Time of birth** | | **Early autumn** | **Early spring** | **Early autumn** | **Early spring** |
|---|---|---|---|---|---|
| **Age at calving** | | **24 months** | **24 months** | **27 months** | **27 months** |
| Ration type | | Mainly silage | Mainly silage | Mainly silage | Mainly silage |
| Milk, whole | litre | 0 | 0 | 0 | 0 |
| Milk, substitute | kg | 45 | 45 | 45 | 45 |
| Concentrates: | | | | | |
| starter (proprietary) | kg | 90 | 90 | 110 | 110 |
| rearer | kg | 360 | 360 | 325 | 325 |
| cereal mix | kg | 542 | 770 | 447 | 485 |
| straw | kg | 265 | 355 | 410 | 293 |
| Forage: silage | kg | 6,690 | 9,750 | 7,215 | 8,895 |
| silage | ha | 0.13 | 0.19 | 0.18 | 0.22 |
| grazing | ha | 0.21 | 0.06 | 0.29 | 0.23 |
| Total forage | ha | 0.34 | 0.25 | 0.47 | 0.45 |

*Basis of data:*

| (a) **Quality of forage:** | **ME (MJ/kg DM)** | **DM (g/kg)** | **'Substitution Rate'** |
|---|---|---|---|
| Silage - 24m calving | 11.0 | 300 | 3 - 3.5 |
| Silage - 27m calving | 10.5 | 300 | 3 - 3.5 |
| Straw | 6.3 | 850 | 1 |

(b) The forage hectares shown are derived from the Grassland section for silage (310 kgN, 3 cuts for heifers calving at 24 months; 220 kgN, 2 cuts for heifers calving at 27 months and grazing (175 kgN). The hectares for silage include a proportion of aftermath grazing, which in turn has been deducted from the grazing requirement.

(c) Intensification of grazing can save up to 25% of the area allocated.

## Replacement Heifer Rearing

GROSS MARGIN DATA

| **Time of birth** | **Early autumn** | **Early spring** | **Early autumn** | **Early spring** |
|---|---|---|---|---|
| **Age at calving** | **24 months** | **24 months** | **27 months** | **27 months** |
| Ration type | Mainly silage | Mainly silage | Mainly silage | Mainly silage |
| OUTPUT - Heifer at calving | 1,619 | 1,619 | 1,619 | 1,619 |
| Less heifer calf | 191 | 191 | 191 | 191 |
| | 1,428 | 1,428 | 1,428 | 1,428 |
| VARIABLE COSTS | | | | |
| Milk, whole @ 42.5 p/litre | 0 | 0 | 0 | 0 |
| Milk, substitute @ £2300/t | 104 | 104 | 104 | 104 |
| Concentrates starters @ £355/t | 32 | 32 | 39 | 39 |
| rearing @ £325/t | 117 | 117 | 106 | 106 |
| mainly cereal mix @ £255/t | 138 | 196 | 114 | 124 |
| straw @ £120/t | 32 | 43 | 49 | 35 |
| Vet & medicines | 47 | 47 | 47 | 47 |
| AI & other livestock expenses | 74 | 74 | 74 | 74 |
| | 544 | 613 | 533 | 529 |
| Gross margin before forage | 885 | 816 | 896 | 900 |
| Forage variable costs: | | | | |
| silage @ £634/ha, silage @ £508/ha, | 82 | 120 | 92 | 113 |
| grazing @ £255/ha | 54 | 15 | 74 | 59 |
| Total Variable costs | 680 | 748 | 699 | 701 |
| GROSS MARGIN (birth to calving) | 749 | 681 | 730 | 728 |
| GROSS MARGIN/forage ha (acre) | 2,201 (891) | 2,722 (1102) | 1551 (628) | 1608 (651) |

Note: The calf price of £300 and value of heifer sold of £1750 have been adjusted to allow for mortality (5-10%) and barren and reject heifers (5-10%) respectively.

## Contract Dairy Heifer Rearing

Contract rearing dairy heifers by a dedicated rearer allows the farmer to focus purely on the milking herd and reduces time and resources previously allocated to youngstock.

As achieving target body weight at different stages throughout the rearing process is the basis of efficient heifer rearing programmes, contracts are often based on certain targets being met, such as growth rate, age at first service and age at first calving. The aim should be for heifers calving at 22-24 months to reach 85-90% of mature body weight at calving.

Contract rearers tend to take delivery of heifers from between 2 to 4 months of age, returning them to the dairy farmer at 4 to 6 weeks before calving.

There are various types of contract:

- *Contract payment based on per animal per day*. This is where the farmer pays a flat rate fee per head per day based on the actual rearing costs.
- *Weight gain on a per kilogram basis contract*. The difference between the delivery weight to the rearer and the return weight to the farmer is divided by the number of days to determine the growth rate per day. The danger with this type of contract is that the rearer must avoid producing heifers that are over-conditioned.
- *Sell and buy-back contract*. The rearer buys the calves at an agreed price, with the farmer retaining the right to buy back the heifers 4 to 6 weeks prior to calving. The rearer retains control of the system but is responsible for all costs and losses incurred. The farmer runs the risk of buying back heifers at an age or weight that is not desirable in their system.
- *Labour and facilities only contract.* A contract where the farmer stipulates the rearing policy and covers all costs such as feed, semen, veterinary medicines, and transport costs (as well as any losses). The rearer only provides the labour and facilities.

Care must be taken to ensure that both the rearer and the dairy farmer's responsibilities are clearly defined, including performance targets and who covers what costs. The rearer should have insurance to cover any third-party claims involving the heifers in his care.

A summary of charges is given below. These are based on the rearer paying all costs associated with the heifers in their care, excluding transport.

| | **Charge** | |
|---|---|---|
| | ***£/day*** | ***£/month*** |
| From 14 days to 3 months of age | 1.95 | 58.50 |
| From 3 months to pre-calving (at 22 months of age) | 2.19 | 65.70 |

These are based on the requirements for a spring born heifer calving at 24 months.