Milk price is increasingly volatile and the current range between top and bottom is growing (Table 1).

Table 1: UK Market Price Trends

<table>
<thead>
<tr>
<th>Contract</th>
<th>Monthly Price ppl</th>
<th>Annual Av. ppl</th>
<th>Monthly Price USD/cwt</th>
<th>Annual Average USD/cwt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dairy Crest Waitrose</td>
<td>32.99</td>
<td>30.99</td>
<td>27.4</td>
<td>25.7</td>
</tr>
<tr>
<td>Dairy Crest SainsburyProfil</td>
<td>30.29</td>
<td>30.38</td>
<td>25.1</td>
<td>25.2</td>
</tr>
<tr>
<td>Robert Wiseman Dairie Tesco</td>
<td>32.15</td>
<td>30.07</td>
<td>26.7</td>
<td>25.0</td>
</tr>
<tr>
<td>Robert Wiseman Dairie Co-operative</td>
<td>31.58</td>
<td>29.49</td>
<td>26.2</td>
<td>24.5</td>
</tr>
<tr>
<td>Arla Asda</td>
<td>29.33</td>
<td>29</td>
<td>24.3</td>
<td>24.1</td>
</tr>
<tr>
<td>Wyke Farms</td>
<td>29.45</td>
<td>28.7</td>
<td>24.4</td>
<td>23.8</td>
</tr>
<tr>
<td>Barber A.R.G</td>
<td>28.97</td>
<td>28.4</td>
<td>24.0</td>
<td>23.6</td>
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<tr>
<td>Meadow Food Composition Leve</td>
<td>28.45</td>
<td>28.3</td>
<td>23.6</td>
<td>23.5</td>
</tr>
<tr>
<td>Arla non-aligned</td>
<td>28.58</td>
<td>28.25</td>
<td>23.7</td>
<td>23.4</td>
</tr>
<tr>
<td>Dairy Crest LiquiProfil</td>
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<td>28.2</td>
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<tr>
<td>Lactalis/Caledonian CheesProfil</td>
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<tr>
<td>Wiseman Dairie MilPartnershi</td>
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<td>28.14</td>
<td>25.1</td>
<td>23.4</td>
</tr>
<tr>
<td>Dairy Cres cheese Davidsto Profil</td>
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<td>27.98</td>
<td>23.5</td>
<td>23.2</td>
</tr>
<tr>
<td>Belton Cheese</td>
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<td>27.7</td>
<td>23.4</td>
<td>23.0</td>
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<tr>
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<td>27.63</td>
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<td>22.9</td>
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<tr>
<td>First Mil Liqui Profile</td>
<td>27.69</td>
<td>27.62</td>
<td>23.0</td>
<td>22.9</td>
</tr>
<tr>
<td>Milk Lin Norther Manu Seasona</td>
<td>29.31</td>
<td>27.58</td>
<td>24.3</td>
<td>22.9</td>
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<tr>
<td>Glanbia Llangefni</td>
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<td>22.7</td>
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<td>South Caernarfo Creamerie</td>
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<td>27.18</td>
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<td>27.62</td>
<td>27.13</td>
<td>22.9</td>
<td>22.5</td>
</tr>
</tbody>
</table>

http://www.fwi.co.uk/prices-trends/
Adapted assuming 8.6lbs of milk per gallon, 4.546 litres in a gallon and 100 lbs in a cwt at £1 to 1.57 USD or 1 USD to £0.63
The prolonged period of milk price depression compounded by rising input costs has driven producers out of the industry. Those producers remaining have expanded their herd size and are continuing to do so exponentially (Figures 1 and 2).

Figure 1: Number of producers in the UK

![Graph showing the number of producers in the UK over time. The equation is $y = 10.76e^{0.0359x}$ with $R^2 = 0.9815$.]

Figure 2: Average number of cows in UK herds, where 0 is the year 1940 and 80 is 2020

![Graph showing the average number of cows in UK herds over time. The equation is $y = 10.76e^{0.0359x}$ with $R^2 = 0.9815$.]
Yields per cow are also rising but the net effect is a fall in overall cow numbers and in the national production (Figures 3 and 4).

Figure 3: Milk yields per cow in the herd per year and UK national herd numbers (Source: DairyCo Datum)

As the UKs herds are getting larger and yields are rising, mastitis rates are at best static (Kossaibati, Hovi, & Esslemont, 1998) (Bradley, Leach, Breen, Green, & Green, 2007) and the national herd’s fertility is in decline (Royal et al, 2000). Lameness prevalence may be increasing and is clearly unacceptable by any measure with latest estimate at 36% (Barker et al, 2010).

It is in this context of falling national production, questionable economic sustainability, increasing stakeholder pressure with respect to the environment and the British consumers particular preoccupation with animal welfare that the latest industry trends must be placed.

THE INCREASING INFLUENCE OF RETAILERS

The last four years has seen retailers take a closer interest in their supplying dairy farms. This interest began around 2006/7 as UK national production began a sustained fall (Figure 4) and was initially driven by a desire to protect their future supply and ‘keep milk on the shelves’. However, since forming a relationship with their suppliers other drivers have come to the fore. One is that having supplying farms more closely associated with a retailer’s brand leads to the increased potential for bad publicity, such as poor cow welfare, that may damage that brand. UK consumers rate the importance animal welfare quite highly and retailers tend to reflect their customers aspirations. Therefore there have been a number of initiatives to specifically address the health and welfare of all their supplying farms by certain retailers. The extent of these schemes has reflected the respective retailer’s position in the marketplace and ability to add value or, conversely, discount.
One such market leading initiative that brings together some of the above considerations is that of Sainsbury’s Supermarket. They formed their Dairy Development Group (SDDG) in 2006 and have since extended the concept to Cheese and other areas of their farming supply base.

In terms of farmer education the SDDG members receive small group teaching. This focuses initially on Lameness, Mobility (Locomotion) Scoring and Foot Trimming but also supports other areas covered by the Sainsbury’s Welfare Standard described below. The Standard requires farmers to attend recognised training courses much like a veterinary requirement for Continued Professional Development.

To support veterinary provision of herd level health advice a framework of data collation and benchmarking is provided by a dedicated interactive web database. This is pre-populated with milk recording information (milk recording is fully funded through the SDDG) and data streams from the movement database and the milk buyer. Time is funded for the SDDG member’s practising vet to provide farm specific advice on health and welfare improvements based on this data and data he or she collects from ‘scoring’ of the cows. This service is supported by Independent External Vets experienced in herd level advice. Their role is to support the local veterinary surgeon where required and also to audit the SDDG member against the Welfare Standard.

To motivate improvements and remove barriers to compliance the SDDG membership receive a premium above the market price for their milk. To receive this premium they must comply with the Welfare Standard. The Sainsbury’s Welfare Standard is based on almost entirely on animal outcomes such as mobility scores, hock scores, condition scores and mortality. It sets out clear tolerances and also a schedule for a reduction of these tolerances to drive improvement over time. These outcome measures were inspired by the work of Temple Grandin (Grandin, 2010) on slaughterhouse design and welfare outcomes.
SDDG member’s herd’s performance against the standard and their performance against the rest of the group is regular feedback to them via computers they have been provided with to encourage further improvement.

This outcome based approach in combination with knowledge transfer, business support and enforced standards looks extremely promising. Sainsbury’s now have data suggesting improvements in Calving Interval, Mastitis Rates and Metabolic Disease. All SDDG herds have been Carbon Footprinted and interestingly initial analysis suggests aggregated Health Scores correlate with Carbon Footprint Measures.

CURRENT THREATS AND OPPORTUNITIES

The spotlight being placed on dairying is intensifying. This has been brought about in part by the submission of plans for an 8,000 cow dairy unit in Lincolnshire. (http://www.ciwf.org.uk/cows_belong_in_fields/default.aspx).

These plans were eventually rejected after massive public outcry on purely technical grounds. There are three to four current plans for dairies units within the UK of 3-4000 cows but they are all understandably reluctant to place their heads above the parapet on an issue that has become a subject of confused vitriol. The largest existing unit has around 2000 cows on one site.

As a response to the above campaigns it would seem likely that at least a proportion of the national retailers introducing ‘grazing standards’, demanding that their suppliers graze their cows for say, 6 months of the year.

Another time bomb is that of antibiotic resistance. With dairy farming being spuriously associated with the pig and poultry industries. However, in June researchers at the University of Cambridge published findings on isolating MRSA bacteria from cows (Laura García-Álvarez PhD, 2011).

Dr. Holmes, one of the authors, stated:

“Although our research suggests that the new MRSA accounts for a small proportion of MRSA – probably less than 100 isolations per year in the
UK, it does appear that the numbers are rising. The next step will be to explore how prevalent the new strain actually is and to track where it is coming from. If we are ever going to address the problem with MRSA, we need to determine its origins."

“Although there is circumstantial evidence that dairy cows are providing a reservoir of infection, it is still not known for certain if cows are infecting people, or people are infecting cows. This is one of the many things we will be looking into next.”

If that transmission is demonstrated then we can expect rapid and legislative regulation of drug use, the first target of which is likely to be blanket dry cow therapy.

In the UK we are seeing some retailers move to attempt to quantify drug use on dairy farms and influence drug choice away from 3rd and 4th generation cephalosporins and Fluoroquinolones in their supplying herds.

On a more positive note there have been some recent attempts to add value and certainly promote ‘fair trade’ agreements with dairying suppliers. A notable initiative of some scale has been the added value retailer Marks and Spencer’s move to reduce the saturated fat content of their entire liquid milk supply. Their suppliers are achieving this by utilising grazing and extruded linseed and removing palm based oils from their cow’s diets. Marks and Spencer’s milk price to their producers would sit consistently at the top of the milk price league table at the start of the paper.
This M & S milk pricing philosophy is shared by a significant move by a number of other retailers to implement cost of production pricing models (Sainsburys and Tesco). This at face value is an altruistic move to promote the economic sustainability of their suppliers. Whilst having obvious value in the market’s milk price troughs, time will tell how these models survive the peaks of the market.

SUMMARY

Retailers and consumers want to become more closely associated with their supplying herds. This presents both threats but also opportunities for those groups of producers willing to go the extra distance and differentiate themselves in the marketplace.

Retailers need best value products to compete but they also crave security. That security can be offered through the assurance of a sustainable supply and the mitigation of potential threats to their brand.

For those groups willing to have an evolved relationship with a retailer and who are able to perform to the highest standards of animal welfare and environmental stewardship and do so demonstrably, there are significant opportunities to add value where previously there was simply a commodity to trade.
APPENDIX: WHAT DOES A TYPICAL UK HERD LOOK LIKE?

Predominantly Holstein Friesian (Based on EBVC data from 326 representative UK dairy farms) with many farms (20%) trying cross breeding but very few herds (6%) with more than 20% of crossbreds within the herd.

Most of the herds would graze their cows with only approximately 4% of herds keeping their milking cows housed for 365 days a year.
When these cows are housed they are kept on cubicle systems (free stalls) or to a lesser degree loose housed on deep bedded straw yards.

Most cubicles have a concrete base covered by a mat or mattress these are bedded as follows with 12% of farms with cubicles using deep sand.

The herds are fed by the following means where PMR means partial total mixed ration. This is a TMR with some supplementary feeding in the milking parlour or from out of parlour feeders (OOP). Only 14% utilise solely TMR feeding.
We asked larger progressive UK dairy farmers about where they saw opportunities to improve their businesses (ebvc data 2011 large herds seminar), we also asked them where they saw the threats to their businesses.

REFERENCES


