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The protein supply balance

This FIN briefing document looks at the key factors influencing the protein supply balance which may impact on the fishmeal industry

Overview

Increasing global demand for biofuels will affect feed prices primarily as a result of the increase in demand for the raw feedstocks (wheat, maize, soyabean and OSR). In the UK it is anticipated that cereal prices will rise, and as a result overall feed prices will increase. If significant supplies of rapeseed meal (RSM) and Distillers Dark Grains plus Solubles (DDGS) become available in the UK, protein sources used in compound feed formulations may change, and this will be reflected in changes in the total protein and amino acid profiles of rations. As a result, there could be increases in the amounts of N and P excreted by livestock. Concentrate feeds used in the UK are subject to world feed prices, and as a result, increasing supplies of RSM, DDGS or glycerol would be most likely to replace imported feeds.

This paper covers:

A. PRICE

1. Why have feed prices been high in 2007?
2. What is going to happen to feed prices over the next year?
3. What is going to happen to feed prices long-term?

B. THE POTENTIAL IMPACT OF BIOFUELS ON THE ANIMAL FEED MARKET

1. What are biofuels?
2. What is the impact of the Renewable Transport Fuels Obligation (RTFO) in the UK?
3. What is the impact of a minimum 10% obligation for biofuel use in the EU-27 in 2020 on agricultural markets?
4. What impact will the growth in biofuels have on the livestock sector?

C. EU ZERO TOLERANCE POLICY ON GMOs

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D. GROWING DEMANDS OF THE AQUACULTURE SECTOR

1. Anticipated growth rate
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A. PRICE

1. Why have feed prices been high in 2007?

1.1 Cereals

Cereal prices were high during the 2006/7 season (in the last week of August feed wheat was £158.00/tonne, 97% higher than the same week in 2006) due to:

- Poor harvests in Europe (autumn 2006) and in Australia and Argentina (spring 2007)
- Growing import demand from developing countries (China and India)
- Low world stocks
- From June onwards – increasing concerns about the feed supply situation in the 2007/08 season. *Source: MLC/EBLEX*

1.2 Poultry feed

- Producers demand poultry price rises as feed costs soar. Poultry producers warn that rising feed prices have pushed the industry to the brink. This stark warning came as poultry producers were facing almost a 100% rise in wheat prices compared with the same time last year. *Source: Poultry World Sept 2007*

1.3 Pig feed

Speakers at the spring National Pig Association conference said pig feed price rises are here to stay.

- Angela Booth of ABN warned an upward trend in feed raw material prices over the next five years is inevitable. The emerging biofuels industry will have a marked effect on the quantity and quality of feed materials availability. The biofuels demand for cereal crops – the US is set to use 33 million tonnes of maize this year – is likely to see energy-based feed materials increase in price faster than protein sources. This would alter the economic break points of feed conversion ratios which will need re-evaluating. *Source: ASI 1 June 2007*

2. What is going to happen to feed prices over the next year?

- Indications are that prices will be higher in 2007/8 due to increased world demand and continuing low stocks. High maize prices in the US caused by the increasing switch to industrial use, will also have a knock-on effect on cereal prices worldwide. The very wet conditions in June mean that average wheat yields in the UK are 10-15% down. *Source: MLC/EBLEX*

- The increasing drive for biofuels is beginning to have a significant impact on feed prices, as these compete with feed for animals and humans. *Source: MLC/EBLEX*
- There is some evidence that the increasing production of biofuels and the planned developments in the UK are one of a number of factors influencing grain prices. Other factors include weather, stock levels, production and demand and the opening of new markets. *Source: HGCA*

3. What is going to happen to feed prices long-term?

- “Worldwide, the single most important actor influencing prices in the next 10-20 years will be the continued expansion of biofuels.” *Source: MLC/EBLEX*

Source documents:

Price

Feed prices and the ruminant sector – EBLEX briefing note. September 2007.

Biofuels

Opportunities and implications of using the co-products from biofuel production as feeds for livestock. ADAS UK Ltd/University of Nottingham. July 2007.

What is the impact of a minimum 10% obligation for biofuel use in the EU-27 in 2020 on agricultural markets. EU Commission Report AGRI G-2/WM D (2007) April 2007.

Making Sense of Biofuels. HGCA Briefing Note. 2007.

Biofuels – potential impact on the animal feed market. Presentation to ACAF meeting June 2007 by Julian Bell, SAC.

GM

EU GM Policy strangles the EU livestock and compound feed producers. FEAC Press Release Brussels 25 September 2007

Economic Impact of Unapproved GMOs on EU Feed Imports and Livestock Production. DG AGRI Report 2006.

Aquaculture

UK Aquaculture Industry. Presentation to ACAF meeting June 2007 by Nick Bradbury, BioMar Ltd.

B. THE POTENTIAL IMPACT OF BIOFUELS ON THE ANIMAL FEED MARKET

1. What are biofuels?

Biofuels are liquid or gas fuels derived from plant matter intended for use as a replacement for petroleum-based products. They are generally divided into:

- Bioethanol – biofuels made from sugar/starch crops eg cereals, potatoes and sugar beet ie crops which are used as direct food sources
- Biodiesel – from oil crops such as oilseed rape, used cooking oil and tallow.

In the EU the emphasis is on biodiesel from oilseed rape, this is pushing rapeseed to a premium versus soyabeans, and on wheat and molasses (from sugar beet) for bioethanol. In the US the emphasis is on bioethanol from maize – in 2007 the US needs record maize plantings, and yield to meet expected demand with plantings to rise 15% at the expense of soyabeans and cotton.

2. What is the impact of the Renewable Transport Fuels Obligation in the UK?

This requires the UK transport sector to ensure a proportion of their sales are made from a renewable source. The obligation starts in 2008, rising to 5% by volume by 2010/11 (2.5% in 2008/9 and 3.75% in September 2009/10). This equates to around 2.5M tonnes of biofuel by 2010 (equivalent to 3MT of wheat and 3MT of rape). This would result in the production of up to 1.3 million tonnes of RSM, 1 million tonnes of DDGS and 210 kt of glycerol per annum by 2010.

The HGCA in its Guide: 'Making Sense of Biofuels' assumes cereals will deliver the initial 5% figure from domestic production by:

- increasing plantings (which have reduced over the last few years)
- using suitable set-aside
- growing crops for biofuels which will be 'multi-functional' – both bioethanol and biodiesel processing will produce co-products that will be used as animal feed
- looking at exports. The UK currently exports 3 million tonnes of wheat every year, and a large percentage of this could be used for biofuels production. *Source: HGCA*

3. What is the impact of a minimum 10% obligation for biofuel use in the EU-27 in 2020 on agricultural markets?

The EU has a Biofuels Directive in place to promote the use of biofuels within the EU. This establishes a minimum level of biofuels as a proportion of road fuel sold, starting with 2% in 2005 and reaching 5.75% of fuels sold by 2010 (not obligatory). The Commission has also issued a mandatory target that Member States achieve at least 10% of their transport fuel consumption from biofuels by 2020.

- An EU Commission study of 30 April 2007 has concluded that the EU can meet this target without significant disruption to existing crop markets. At the current rate of progress, biofuels are likely to account for 6.9% of the transport fuel volume by 2020, so the rate of uptake needs to increase. In the longer-term cereal yields are projected to increase at a rate of 1% annually, with oilseed rape and sugar beet rising by 2%. Meat consumption is predicted to plateau in line with declining population growth, which will free a proportion of feed crops for biofuel use. *Source: EU Commission Report AGRI G-2/WM D (2007) April 2007*

4. What will be the impact on the livestock sector?

- The increase in feed prices will impact negatively on all sectors that use feed as an input. Within the livestock sector, ruminants will be less affected than pigs and poultry as feed accounts for a smaller share of total costs. *Source: EBLEX*
- An EU Commission study of 30 April 2007 has concluded that the impact of a minimum 10% obligation for biofuel use in the EU-27 in 2020 would be moderate to neutral on the livestock sector. Cattle production would benefit from the availability of dried distiller grain (DDG), the by-product of bioethanol production from cereals, at very competitive prices. Pork and poultry production would equally benefit from cheaper protein feeds partly from bioethanol but more importantly from the biodiesel production. Similarly prices for rapeseed and partly also soybean meal would drop significantly by some 25% (soymeal) and 40% (rapemeal). This will partly offset the increasing feed costs caused by the price impact on the cereal complex. Shifting feed to a protein richer content would be another cost dampening factor. *Source: EU Commission Report AGRI G-2/WM D (2007) April 2007*
- "...the 10% scenario does not overly stretch the land availability nor does it lead to a significant increase of intensities of production because of the limited pressure on markets. The long-term until 2020 and the relatively small increase in cereal feed use in the EU over that time would leave enough possibilities for European farmers to support this new market outlet. *Source: EU Commission Report AGRI G-2/WM D (2007) April 2007*
- Based on current estimates of production, it seems likely that the livestock industry could absorb all of the additional RSM and glycerol produced. Their use would displace other feed materials currently imported into the UK. *Source: HGCA, EBLEX, BPEX report July 2007 on biofuel production*

C. EU ZERO TOLERANCE POLICY ON GMOs

1. EU GM policy strangles EU livestock and compound feed market

The European Compound Feed Manufacturers' Federation (FEFAC) has warned that the current EU GM policy will cripple the EU livestock market and is urging the EU Farm Council to take urgent measures to ensure adequate access of livestock farmers to feed materials. *Source: FEFAC Press Release 25 September 2007*

- **Background:** New GMOs are being developed in feed exporting countries at a high rate. The regulatory procedures for the approval of GMOs in the EU differ significantly from those of exporting third countries, including differences in the time for treating authorisation dossiers. The time it takes for GMO authorisations to be completed in the EU takes more than 2.5 years, as compared with a US average of 15 months. The discrepancy can lead to 'asynchronous authorisations', where a GMO is fully approved for commercial use in food and feed in one country, but not in others. *Source: DG AGRI Report*
- **Current position:** The systematic slowdown of GM approvals in the EU, combined with the strict zero tolerance policy for the presence of non EU-approved events, has already resulted in the loss of 4 million tonnes of Corn Gluten Feed and DDGS that the EU has imported for years from the US. Their substitution has artificially inflated feed prices in the EU with further massive feed price increases expected in the new marketing year, if traces of newly authorised GM events in export countries appear in the supply of soybean meal to the EU, before they obtain full EU approval. The EU imports 35 million tonnes of soybean meal annually (approx 75% of its vegetable protein requirements) with no viable alternatives available. Feed costs account for 60-80% of the production cost of pig and poultry. *Source: FEFAC Press Release 25 September 2007*
- **The future:** DG AGRI published a study concluding for the poultry sector that the impact of asynchronous authorisation of GM soya events under the worst case scenario would be severe, as poultry production would fall to 29% and 44% below the baseline level in 2009 and 2010 respectively. A sharp increase in the EU price would affect high imports and EU exports would disappear. EU consumption would drop to 16% and 26% below the baseline level in 2009 and 2010 respectively. *Source: DG AGRI Report*

D. GROWING DEMANDS OF THE AQUACULTURE SECTOR

1. Anticipated growth rate

- IFFO's projection of the future use of fishmeal and fish oil in aquaculture diets until 2012 is:

| | Global Production 000 tonnes | | Fishmeal used 000 tonnes | | Fish oil used 000 tonnes | | % of fishmeal production | | % of fish oil production | |
|-------------|---------------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|
| | Fmeal | Foil | FAO | IFFO | FAO | IFFO | FAO | IFFO | FAO | IFFO |
| 2002 | 6201 | 959 | 2696 | 2769 | 758 | 810 | 43 | 45 | 79 | 84 |
| 2005 | 5877 | 965 | 2666 | 3041 | 551 | 813 | 45 | 52 | 57 | 84 |
| 2010 | 6000 | 950 | 2478 | 3268 | 534 | 826 | 41 | 55 | 66 | 87 |
| 2012 | 6000 | 950 | 2577 | 3607 | 664 | 836 | 43 | 60 | 70 | 88 |

- FAO estimates that an annual global production increase of 3.3% until 2030 is feasible in the aquaculture sector. *Source: The State of World Fisheries and Aquaculture 2006 published March 2007*

2. Replacement of fishmeal

- Fishmeal is the best and most natural raw material for fish feed but there are doubts regarding the future supplies of fishmeal and fish oil.
- There is a need to improve the efficiency of feed formulations and reduce how much fishmeal they contain.
- The aim is the formulation of fish feeds which meet the nutrient requirements for maximum fish performance from available ingredients at optimum cost.
- There are moves to replace fishmeal in fish feed diets with 100% replacement of some species ie carp, catfish, tilapia and rainbow trout. Diets for Atlantic salmon can be produced containing less than 25% fishmeal and 10% fish oil without compromising fish growth.
- The demand from the UK market is for independent sustainability certification as provided by the MSC. Currently no fisheries for fishmeal or fish oil have MSC certification. The Scottish Pelagic Sustainability Group (SPSG) is seeking Mariner Stewardship Council (MSC) certification for the western mackerel and North Sea herring fisheries. Both fisheries provide trimmings to UK aquaculture.