Co-products newsletter
Issue 15

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THE FIFTH QUARTER

from STEVE'S desk

Hello again from Steve's desk.

Sadly this will be the last Fifth Quarter from my desk. I am changing career paths by moving into the biopharmaceuticals industry. I would like to thank the red meat industry and the Australian Renderers Association for their continual support in the co-products program.

Special thanks go out to my industry mentor Bill Spooncer.

Sincerely

Stephen De Martin

Improving offal recovery

Offal is some of the most valuable product in the current trading climate. The high price for offal is mainly due to strong demand for tongues, rumen pillars and thick and thin skirts in Japan. There is a shortage of supply as US products are excluded from the market, but as well as changes in world supplies, offal prices also fluctuate with seasonal factors and the value of the Australian dollar. According to the MLA monthly co-products monitor, the current potential value of edible offal is approximately $115 from Japanese steers and $65 from cows. These values are not realised due to inevitable losses through accidental contamination, pathological conditions and other causes.

With some offal attracting record prices, there is enough incentive to recover as much product as possible for human consumption. A plant-initiated project has demonstrated that recovery of edible tripe from burst paunches can increase yields by 12%. This could result in increased revenue of over $100,000 per year at a plant that processes 125,000 head annually.

In 2001, MLA completed the OffalCom project. This project was designed to clarify the reasons for offal condemnations and to recommend methods that improve recovery rates. One of the objectives of the project was to examine whether recovery of edible tripe from burst paunches could be justified. The results showed as long as processing conditions are appropriate, the microbiological condition of tripe and rumen pillars from burst paunches is equivalent to products from intact ones.

As a result, AQIS notice 2001/21 'Enhanced recovery of green offals at exporting slaughtering establishments' was published. This notice permits recovery of edible product from burst paunches under certain conditions. These conditions avoid contamination of other offal if the paunch is burst. The notice outlines the procedures for limiting the number of burst paunches and controlling potential contamination of other offal and carcase meat, which must be specified in HACCP plans.

Recently an abattoir undertook a project to maximise the recovery of edible offal. A training program was implemented and some of the main causes for downgrading offal were identified. The project also examined the microbiological

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condition of edible products from burst paunches. This confirmed the products from these new procedures were consistent with industry or benchmark standards.

Before the tests were started, the HACCP plan and procedures related to offal collection were reviewed. This was to make sure the recovery of edible product from burst paunches would not affect the safety of any other products. The outcome of the review meant changes were made to work instructions.

To ensure that tripe products collected from burst paunches were acceptable, 200 samples were collected for microbiological analysis. Samples of scalded tripe pieces and rumen pillars (mountain chain tripe) were collected from intact and burst paunches. There was no significant difference in the total counts, coliform counts and *E. coli* counts on products recovered from burst and intact paunches. *Table 1* shows the microbial counts on tripe products. These are the mean of 60 samples.

The mean total counts of scalded tripes from burst paunches was slightly higher than the counts of tripes from intact paunches. However, they were very low (about 1,000 cfu/g) and are at acceptable levels In all other cases, the microbial counts from burst paunches were not significantly different from those taken from intact paunches.

With no significant difference of the microbial condition of burst paunches, and the documented review of the HACCP plan, AQIS permitted the plant to recover edible product. However, the paunches are still subject to inspection by AQIS staff.

Resulting from this project and the approval of the alternative procedures for collecting tripe products, the recovery of scalded tripe and rumen pillars increased by 12%. Based on processing 125,000 head per year and the current prices of offal reported in the MLA monthly co-product monitor, this increase in the yield of scalded tripe and rumen pillars could produce increased revenue of approximately $100,000 for the processing of cows and about $140,000 for steers.

The value of this project has not only been in improved recovery of tripe products. The review of the HACCP plan for collection of edible material from burst paunches provides a template for maximising the recovery of other offal that might be affected such as spleen and intestinal products.

	Scalded tripe		Rumen pillars	
	Intact paunch	**Bust paunch**	**Intact paunch**	**Burst paunch**
Total count (SPC log10 cfu/g)	2.96	3.21	3.62	3.62
Coliforms (log10 cfu/g)	0.65	0.65	1.94	1.71
E. coli (log10 cfu/g)	0.59	0.57	1.88	1.70

Table 1: Microbial counts on scalded tripe and rumen pillars recovered from burst and intact paunches.

Co-products in petfood

There are many potential uses of co-products from meat production, some of which are more valuable than others. Those countries affected by BSE have explored the less valuable uses such as energy production. However, in Australia there are few constraints on pursuing the best returns for co-products. Klemens Rethmann from SARIA Bio-Industries, part of Europe's largest rendering and recycling company, has proposed a hierarchy of co-products values *(Figure 1).* MLA has modified the Rethmann hierarchy to include petfood, the second most valuable use of co-products. With the growth in sales of petfood there should be some good opportunities to increase the use of co-products in this product.

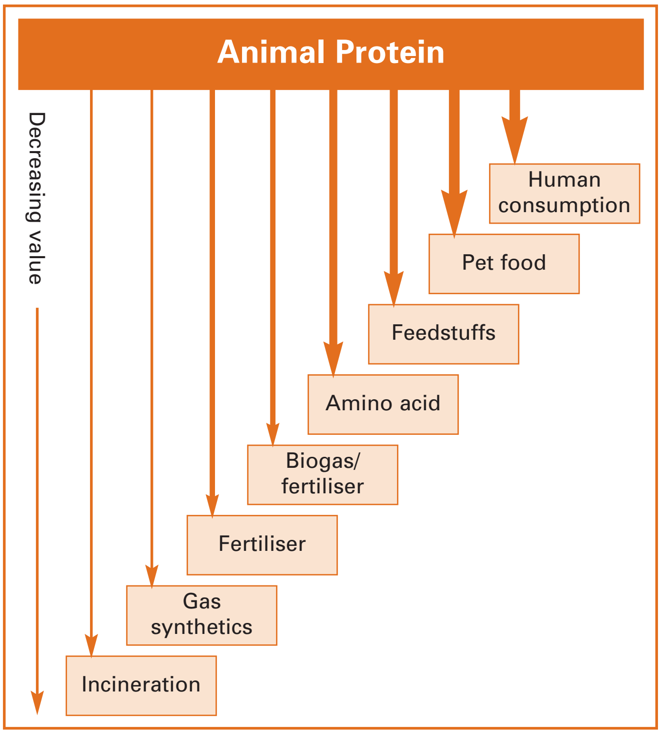

Figure 1: Hierarchy of value of co-products. Courtesy of SARIA Bio-Industries

In a report to MLA on the petfood industry in 1992, the total volume of petfood produced for export and domestic uses was estimated to be 500,000 tonnes. MLA has commissioned a new report. The objective of the new report is to identify opportunities for expanding and adding value to the use of co-products in petfood. It is estimated that in 2002 the production of petfood for domestic and export use was 600,000 tonnes. While there has been around 20% growth in petfood production in Australia over the last 10 years, it is more interesting to focus on the growth in different sectors of the market. In 2003, retail sales of traditional products of wet and dry dog and cat food were static, while sales of wet dog food decreased by 6%. Sales of newer style products such as chilled petfood and pet treats increased sharply, with chilled petfoods sales increasing by 23% and dog treat sales increasing by 8%.

Currently the petfood industry uses about 97,000 tonnes of fresh red meat and about 35,000 tonnes of meatmeal per year. The use of meatmeal has been largely unchanged for the last ten years but the use of fresh red meat has fallen by nearly 40%. MLA has conducted a survey of the petfood industry to identify opportunities to increase the value of co-products used in petfood.

An initial poll identified prospects for increased use of co-products in the following areas:

- Improved consistency of the quality of raw material;
- Increasing the palatability of petfood; and
- Novel ingredients for petfood products.

When petfood manufacturers were asked what areas (out of a list of ten) they would like to see more reasearch conducted in, there was most interest in the development of meat-based digests. The digests could be used to improve the palatability of petfoods, particularly dry petfood. Poultry based digests are well established in the petfood industry and there could be a natural extension of the technology to meat products.

There was also strong interest in the production of high quality meatmeals, including high protein meatmeals; the development of meat based flavour systems for wet petfoods; and new meat sourced ingredients such as glucosamine and chondroitin.

This survey suggests there are opportunities for short-term projects on improvements to meatmeal quality and medium-term projects on meat digests and flavour systems. MLA is conducting a workshop to bring petfood manufacturers together with other meat industry representative to discuss potential research ideas and initiate co-operative research alliances.

Expanding the use of co-products in the petfood industry has two advantages. In the short-term it could provide increased revenue to the meat industry. In the long-term it creates greater diversity in the use of co-products. Traditional uses of co-products, such as for human consumption and stock feed, have been restricted in some countries due to BSE scares. Diversification will continue to provide safe and profitable disposal of co-products.

Co-products hit record prices

In April the MLA monthly co-products monitor noted record prices for several co-products. Sharp price increases have occurred since December 2003 when a case of BSE was identified in the USA, which led to the exclusion of US products from some markets. Even if US product is not excluded, markets are showing a preference for products from BSE-free countries such as Australia. However the lack of US product in world markets is the main reason for the price increase.

The star of the co-products markets is foetal blood. The price of Australian foetal blood has been well above US prices for several years. It has been stable at $300 per litre for almost eight months and jumped in March to nearly $400 per litre. Some customers have switched from US to Australian sourced blood in response to the case of BSE, but the health status of Australian foetal blood is not the only reason for high prices. There are an unusually high number of processors of foetal blood in Australia and the competition to secure limited supplies keeps the prices high.

Concentrated gall is also at record prices with some abattoirs reporting up to $19 per kg. The typical price of concentrated gall is $8–9 per kg although there were high prices over $12 per kg in 1998. The high prices are driven by demand from pharmaceutical companies in China and Europe. The current round of increases started in late 2003 but was unrelated to BSE in the USA. It appears that the demand for pharmaceutical products such as treatments for dissolving gallstones is creating increased interest in concentrated gall.

The price of edible co-products has hit record prices as well. Tongues exported to Japan have increased in price to an average of $22.30 per kg and thick and thin skirts are over $8 per kg. These prices are almost entirely due to the absence of US product from the market, although the weaker Australian dollar has also had an effect. There is a strong demand for tongues in the summer months in Japan as they are a popular BBQ item, and the high prices should continue during the northern summer.

Meatmeal and tallow prices have been affected by a shortage of supply from the US, but these products have to compete with other commodities, such as soy proteins and palm stearine. The markets are dominated by vegetable proteins and oils, so the prices of meatmeal and tallow are constrained by the price of vegetable based products. Other influences include the reduction in poultry flocks in SE Asia due to avian influenza. This has reduced demand for meatmeal and subsequently prices have fallen for the first quarter of the year. Although the price of meatmeal increased immediately after BSE was discovered in the US, prices fell over the first quarter of the year. In April prices increased to close to $500 per tonne due to a lack of US product on export markets and high prices for soy meal.

Contact

Client and Innovation Services

Meat & Livestock Australia

Tel: (02) 9463 9166 Fax: (02) 9463 9182

Email: hphilpott@mla.com.au

MEAT & LIVESTOCK AUSTRALIA

ABN: 39 081 678 364

Level 1, 165 Walker Street, North Sydney, NSW 2060
Locked Bag, 991, North Sydney, NSW 2059

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