



THE FIFTH QUARTER

from **STEVE'S**
desk

Happy belated New Year!

I hope everyone has had an enjoyable and safe Christmas break. The time has come, however, for us to get back to work. I have mixed up this edition of *The Fifth Quarter* with some interesting developments in foetal blood recovery and the outcomes of the Nutritional Technical Review project, run in conjunction with the Australian Renderers Association.

From a supply chain perspective, MLA has produced an excellent publication, "Speaking a common language", which focuses on security and savings for the red meat industry with EAN.

I hope you find this issue of *The Fifth Quarter* an interesting read. All the best for 2004.

Stephen De Martin



New electronic bleeding enhances foetal blood recovery

Blood collection from foetal calves has been enhanced with a new electronics technique developed jointly by MLA, Applied Sorting Technologies and Realcold Milmech. The system uses special electronic stimuli to massage the foetus during blood extraction, speeding up the bleed and

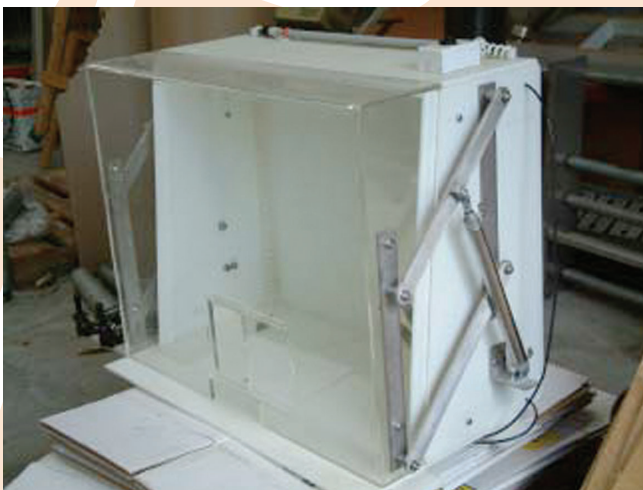


Figure 1: Foetal calf stimulation enclosure

increasing the yield recovered by conventional means. Theoretically, blood yield from a foetus (slink) can be up to 8.5% of dead weight, however best practice is approximately 7%.

A special patented enclosure has been developed to allow operators to work with the bleeding needles while at the same time preventing contact with the live part of the slink.

Installation is relatively easy: the plant just needs to supply compressed air and 240 volts and the unit can sit on existing benches. The cost of the unit can be recovered in well under six months, depending on how many foetal calves are processed. Figure 2 on the next page shows a schematic of how the slink is placed and connected in the blood recovery stimulation enclosure.

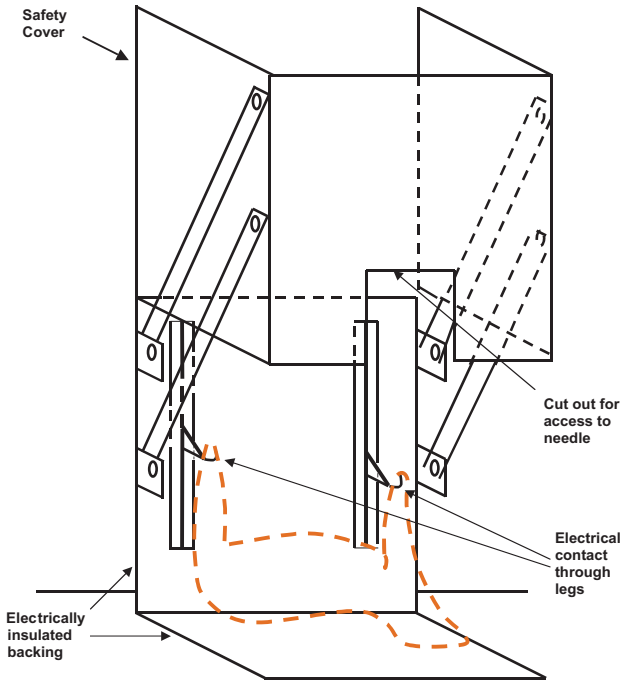


Figure 2: Schematic diagram of the electronic blood recovery stimulator

Results of plant trials

Plant trials have confirmed that the stimulation equipment is practical for most foetal bleeding areas. Blood was recovered using existing methods and the slink was then placed in the foetal stimulator for enhanced blood recovery. The results from the trials can be seen in Table 1. The efficiency of the process can be increased if the slink is placed in the stimulator from the start of the blood collection process. Blood collection under existing methods prior to stimulation and post stimulation ranged from 3.3–7% and 4.6–8.6% respectively.

A number of factors can reduce the blood recovery yield from a slink, including:

- i) the time that elapses after the mother is stunned;
- ii) the time that elapses between removing the slink from the foetal sack and commencing stimulation;
- and
- iii) the efficiency of the collectors.

The electronic blood recovery stimulator equipment is now being taken to the commercial stage. For more details you can contact Colin Giles of Realcold Milmech on (07) 3340 1116.

Calf weight (kg)	Blood recovery existing (kg)	Extra blood recovered (kg)	Total blood recovered (kg)	Extra yield (%)
7.10	0.278	0.053	0.331	19.06
12.30	0.690	0.077	0.767	11.16
19.10	0.978	0.101	1.079	10.33
17.00	0.707	0.110	0.817	15.56
11.00	0.443	0.096	0.539	21.58
8.00	0.351	0.149	0.500	42.45
7.20	0.379	0.067	0.446	17.68
15.00	0.616	0.093	0.709	15.10
24.00	0.786	0.320	1.106	40.71
30.50	1.501	0.238	1.739	15.86
18.50	1.177	0.168	1.345	14.27
40.00	2.208	0.218	2.426	9.87
21.00	0.910	0.094	1.004	10.33
9.00	0.626	0.145	0.771	23.16
33.00	1.406	0.215	1.621	15.29
15.00	0.851	0.104	0.955	12.22
17.50	0.834	0.094	0.928	11.27
25.00	1.237	0.138	1.375	11.16
14.00	0.683	0.074	0.757	10.83

Table 1: Foetal blood recovery trial results

Ex-works foetal blood prices – where to from here?

Australian foetal blood prices pre-US BSE news stabilised at just under AU\$300, as depicted in Figure 3.

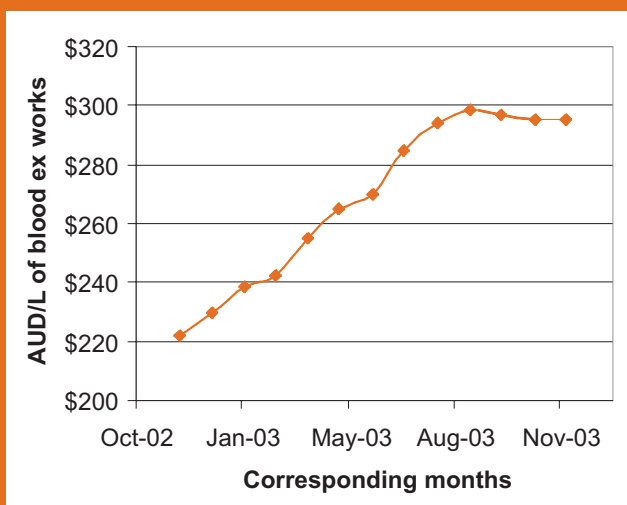


Figure 3: Price of Australian foetal blood prices sold by abattoirs (ex works).

Meat and Bone Meal Nutritional Technical Review released

MLA, in partnership with the Australian Renderers Association (ARA), has released the Australian Meat and Bone Meal Nutritional Technical Review on CD-ROM.

The publication contains a compilation of published data relating to MBM and its use in animal feeding. The aim of the publication is to provide animal nutritionists and feed industry participants with a consolidated source of data, thus increasing their knowledge and understanding of MBM and its application as a raw material.

Australia has one of the best track records in the world for producing high quality beef and sheep meats that are free of chemical residues. Processed MBM from these animals also enjoys this chemical residue-free status.

MBM is primarily considered as a high protein raw material, which also has added value in supplying energy, minerals and vitamins to non-ruminants. Because MBM is derived from animal tissues it has been used for many years as a reliable source of amino acids. Recent research work has shown Australian MBM manufactured under the correct conditions provides amino acid digestibility in excess of 90%.

The ash component of MBM is principally the mineral derived from bone together with lesser amounts of minerals contained within animal tissues, which are rendered. It is an excellent source of calcium, phosphorus and magnesium. It also supplies additional quantities of iron and zinc relative to other raw materials.

The amount of fat within MBM provides a valuable source of energy for animal feeding. The results from a survey carried out in 1999 show gross energy of 17.38 MJ/kg (4,154 kcal/kg).

To follow up from this work, MLA and the ARA are working together to promote a workshop on Australian MBM into China.



To order your copy of the CD-ROM contact Heidi Philpott on 02 9463 9166 or email hphilpott@mla.com.au or download the content from the ARA web site, www.ausrenderers.com.au

MBM recommended feeding usage

Poultry

Within Australia the poultry industry has commonly used MBM at levels of up to 10% inclusion in broiler and layer rations. Product produced under low temperature rendering conditions, such as some of those practised within Australia, is an excellent source of amino acids in poultry diets. The table below provides recommended amino acid digestibility co-efficients for MBM feeding in poultry.

	Chick Digestibility Coefficient (%)	Adult Digestibility Coefficient (%)
Lysine	77	81
Methionine	84	85
Cysteine	55	58
Met + Cys	69	74
Threonine	69	79
Tryptophan	75	78
Isoleucine	75	84
Leucine	76	85
Valine	73	83
Histidine	76	80
Arginine	76	84

Pigs

MBM was the first supplement added to all grain rations for pig feeding. The table below represents the maximum feed inclusion rate for pigs.

Pig type	Maximum usage rate
Early weaner	5%
Weaner	8%
Grower/finisher	10%
Breeder	10%

Data relating to dietary energy content of feed ingredients is required to allow formulation of pig feed diets. The pig industry utilises a number of definitions of energy:

- Gross Energy (GE) being the result of combustion of the feed, with use of a bomb calorimeter to measure the energy released;
- Digestible Energy (DE) which is the energy left after energy lost in faeces;
- Metabolisable Energy (ME) accounts for energy lost in faeces, urine and digestive gases; and
- Net Energy (NE) is equivalent to ME less an increment for heat generated through digestion.

	Energy (MJ/kg)	Content (kcal/kg)
DE	11.3	2700
ME	10.9	2605
NE	9.1	2175

Petfood

Typically levels of 20–25% MBM inclusion in dog foods are used depending on other raw materials available. The life stage of the pet is also important depending on whether growing, pregnant or lactating. In cat diets the levels of inclusion will depend on the ash content of the MBM. For low ash MBM (<20%) higher levels can be used.

Prices on the move

Meat meal prices were lower in January according to the price survey but the average price has been affected by an unusually low price of \$340 per tonne. The average price was \$452 per tonne although the typical price for the month was around \$480 per tonne. Prices in December were high due to high soy prices and stockpiling of product by domestic feed mills in anticipation of reduced supplies in January. Prices also increased at the beginning of January because of the expectation of strong demand in SE Asia following the announcement of the case of BSE in the USA. US meat meal was banned in most countries and there was an expectation that there would be more poultry and pig production in SE Asia to replace beef. Prices settled back again later in the month.

On the domestic side, feed mills had good stocks built up over December and November. In addition production levels were higher than expected because kills increased to take advantage of high meat prices in Japan. On the export side, soy prices also weakened during January. Despite the bans on

US meat meal, prices on the export markets were limited by the relative price of soy protein. The lower soy price and high value of the A\$ during the month caused prices to slip. Meat meal prices in the US have dropped from US\$271 at the beginning of December to US\$93 in January. US feed mills are taking advantage of the low meat meal prices and this has created a surplus of other animal protein meals such as poultry meal and feather meal. These products are now being exported at low prices and have also undermined the price of meat meal in the export markets.

Date of report	Bleachable fancy tallow (US¢/pound)	Meat meal 50% protein (US\$/ton)
28 July 2003	16.75	185
29 August 2003	17	202
03 October 2003	21	207.50
31 October 2003	25.5	250
01 December 2003	21.00	271
02 January 2003	25.00	180
02 February 2004	20.00	93

Table 2: US prices for tallow and meat meal reported by USDA

Speaking a common language

The way the red meat industry operates is about to change for the better to become safer, more responsive and more successful.

Industry groups as diverse as MLA, AUS-MEAT, Australian Quarantine and Inspection Service (AQIS), EAN Australia and the Australian Meat Industry Council are working together to make paddock to plate traceability a certainty in Australia. There are three major benefits for industry members:

1. Food safety and a buffer against recalls;
2. Access to markets;
3. Lower costs.

High value bioactives update

Following the successful Meat Industry Bioactives and Convergence Workshops held last year, the bioactives program is working towards follow-up sessions.

A follow-up convergence meeting is planned for mid year bringing together leading scientists from Australia and New Zealand to discuss future opportunities for the industry, as developments in science and technology open up new horizons.

Meat & Livestock Australia has been a keen supporter of AusBiotech over recent years and will continue this support at their annual conference later in the year. Planning is still in the early stages but a full day devoted to red meat bioactives is being considered.

Upcoming international conference

The World Congress on Biotechnology and Bioprocessing
April 24–26, 2004
Orlando, Florida
<http://www.bio.org/worldcongress/>

For further information on international conferences or the high value bioactives program, please contact:

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Printed February 2004

www.mla.com.au

ISSN: 1446 – 0955

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