



Novel Rendering Technology

1997

**MEAT AND LIVESTOCK
AUSTRALIA**

ACN 081 678 364

PROCESSING AND PRODUCT INNOVATION UNIT

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A technology audit of the rendering industry has resulted in a 158-page report covering materials handling, rendering processes and the end uses of meat and bone meal (MBM) and tallow. All relevant technology issues were investigated during the audit which covered literature searches of local and international databases, sourcing of research papers, abstracts and patents. Domestic and overseas manufacturers and suppliers were also contacted regarding their product lines and new developments.

A copy of the full report, titled “Rendtech Compendium (Rendering Technology Audit)”, is available on request from the MRC.

Raw material

Six raw material handling issues are covered in the report:

1. Raw material conveying
2. Metal detection
3. Size reduction equipment for hard material
4. Hydrolysis of wool
5. Preservation
6. Viscera cutting, washing and dewatering

The audit compares processes used in New Zealand and Australia and the extent to which equipment and technology are utilised. Items covered include equipment for improved cutting and washing of viscera, chemical hydrolysis of woolly material and preservation of offal by acid addition.

According to the audit, equipment suppliers have developed new equipment, particularly for transport of raw materials by pumping and size reduction of material. Little by little, use of this new equipment is being implemented.

Major problems identified with raw material handling include addition of water to material through the use of pneumatic conveying and viscera washing and resultant polluted effluent. The audit showed, however, that alternative practices offer improvements. Use of improved viscera cutting and washing technologies reduces pollution of effluent. The most worthwhile

developments suitable for use in raw material handling in the rendering industry appear to be raw material pumps and improved viscera washing technology.

The Rendering Process

This section of the report considers novel rendering systems. Optional bone products are outlined together with their process requirements.

Processes are explained in brief, with advantages and disadvantages discussed. Items which warrant further investigation are flagged.

Topics covered in detail include:

- Dry rendering systems
- Wet rendering systems
- Additional processing hardware including waste heat recovery
- Odour treatment
- Effluent load reduction including stick-water solids recovery
- Hygiene and microbiological considerations
- Effect of rendering processes on the nutritional value of meals
- Alternative rendering systems
- Bone and bone products
- Difficult-to-render materials

Meat meal

A market definition of the end users of meat and bone meals (MBM) is provided in this section, and their rank in order of meal consumption is provided. Specifications, considerations and separately, hygiene issues and the use of antioxidants are covered.

Main end users of MBM are the stockfeed and pet food industries. Separate sections are devoted to each of these, setting out the use of MBM in relation to nutritional requirements, competing nutrient sources, palatability, variability, the value of MBM and potential growth areas. Special rendered products including high protein meals are also considered.

Although currently not a major end user, the aquafeeds industry, particularly in Asia, holds

great potential as a significant future market. This is covered separately.

Scope is as follows:

- Market situation
- Specifications and analysis
- Hygiene
- Anti-oxidants
- Stockfeeds
- Competing nutrient sources
- Palatability
- Variability
- Value of meat meals
- Potential growth in the use of rendered meals
- Special rendered products
- Pet foods
- Aqua feeds
- Novel applications.

Tallow

Existing and potential uses for tallow are examined, and analytical and specification issues are covered in brief together with storage and anti-oxidant considerations. A sub-section on market considerations endeavours to provide a perspective on the position of tallow.

The animal nutrition area, particularly concerning tallow use in dairy supplements, appears to hold the most potential for increased tallow consumption. However, tallow is a finite stock depending on production in the meat industry. New applications will help maintain demand and good returns for tallow.

Eight areas are covered in the report:

- Market situation
- Edible applications
- Oleochemicals
- Biodiesel
- Animal nutrition
- Analysis and specifications
- Storage and antioxidants
- Environmental.

Additional information

A copy of the full report, "Rendtech Compendium (Rendering Technology Audit)", provides detailed information. The report, compiled by Australian Meat Technology, is available on request from the MRC.

Additional help and advice is available from Australian Meat Technology Pty Ltd. Phone:

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