Rendering – Process and Benefits

Factsheet FABRA-FS-002

KEY BENEFITS

- All categories of ABPs can be rendered
- Strictly controlled bio-secure processing
- High value, low carbon products derived
- No waste

WHAT IS RENDERING?

Rendering is a cooking or drying process that destroys pathogens and stabilises animal by-products (ABPs), removing the moisture and separating the fat (tallow) and protein meal (PAP) components into a range of marketable products.

Most UK rendering plants operate on a continuous basis, although a few slaughterhouses have small batch rendering facilities for their ABPs.

THE PROCESS

A typical rendering process is shown in Figure 1 and includes size reduction, cooking and separation of fat, protein from moisture.

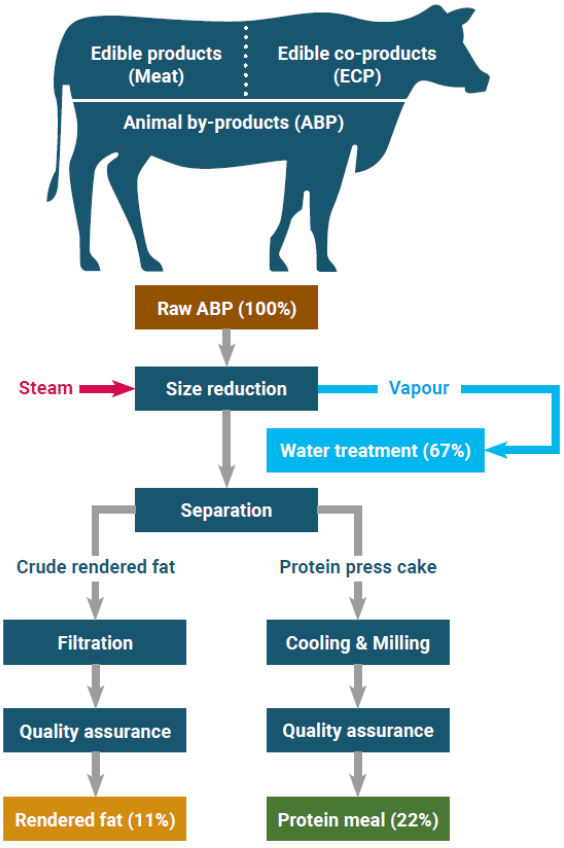

Figure 1 – Typical rendering process

Blood and feathers are processed in separate but similar facilities, to manufacture blood meal and feather meal. Dedicated rendering lines process single species Category 3 ABPs to produce higher value products such as poultry fat or lamb meal. Higher risk Category 1 ABPs are also processed in dedicated separate facilities. (Further information on the categorisation of ABPs can be found in the factsheets *What are Animal By-products?*[1] and *Animal By-products and Biosecurity*[2]).

RENDERING IN THE UK

FABRA UK members represent approx. 90% of the UK rendering industry. Our members operate 22 processing sites, employing over 2,000 staff and processing over 2 million tonnes of ABPs each year.

Sites operate in England, Scotland and Northern Ireland and locations are shown in Figure 2. Members details can be found at www.fabrauk.co.uk/our-members.

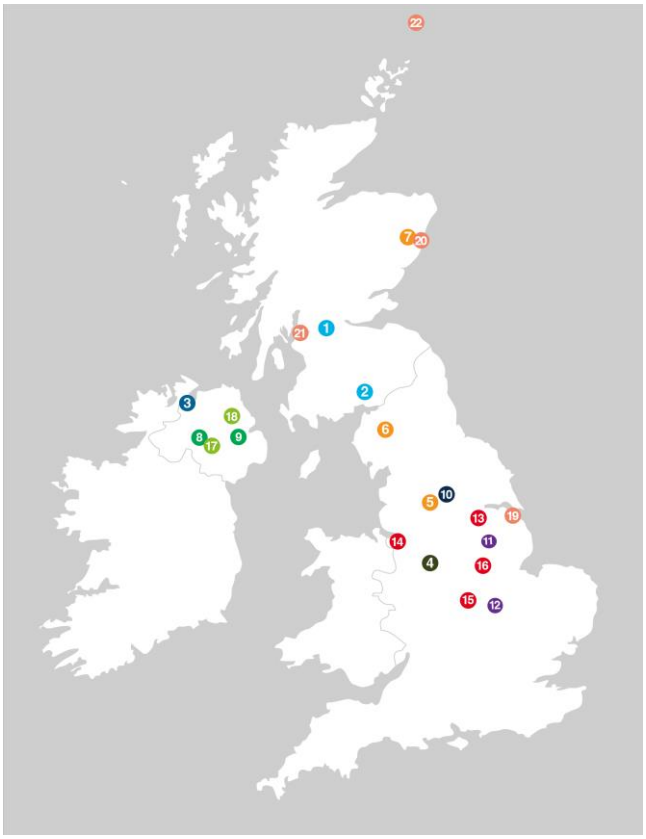

Figure 2 - FABRA UK members sites

Figure 3 shows the type of ABP processing lines operated by FABRA UK members.

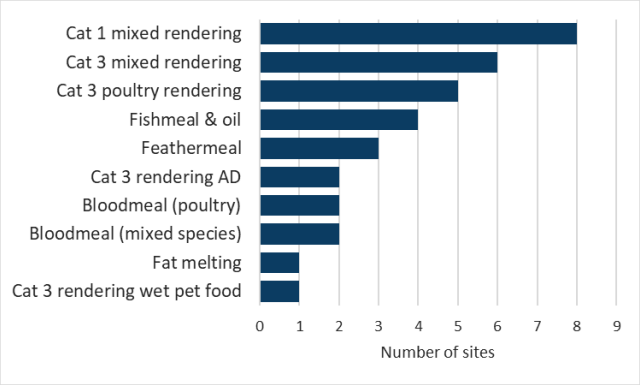

Figure 3 - FABRA UK ABP processing sites by type

USES OF RENDERED PRODUCTS

The fat and protein meal products have several low carbon uses, depending on the ABP material category they are derived from (see Figure 4).

Tallow can be used directly as a fuel and is commonly used in the manufacture of biodiesel. It is also used in the oleochemical industry. PAP from Category 3 ABPs is a common ingredient in animal feeds and pet foods and can be used as a fertiliser.

A breakdown of the products derived by renderers, fat processors and edible co-products is available in the factsheet - *Outlets for Animal By-Products Derived Products*[3].

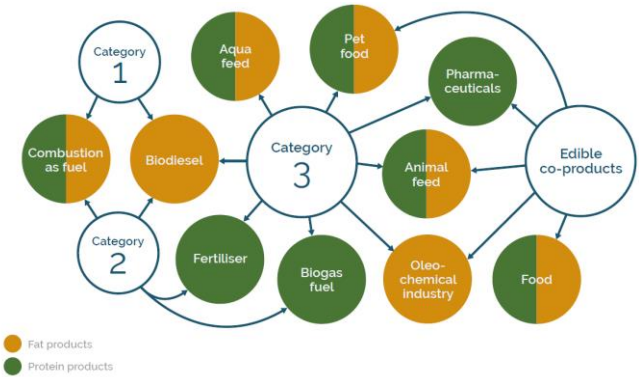

Figure 4 – Applications for rendered products

CARBON FOOTPRINT AND HANDPRINT

Studies have been undertaken to assess the carbon footprint of rendering which show that rendering has a lower footprint than alternative animal feeds. This is primarily because rendering is not a linear process but connects a virtuous circular cycle, returning animal proteins and fats as feed.

It is also clear that rendering improves the environmental balance by providing renewable fertilisers and energies, increasingly called its handprint. These rendered products lower the reliance on fossil fuels and minerals and increase soil fertility. (Refer also to the factsheet T*he Circular Economy and Animal By-products*[4]).

BIOSECURITY

Rendering provides safe and secure treatment of ABPs to break the disease cycle, making the material safe and available for reuse in a range of applications (see Figure 5).

At times of crisis, FABRA UK renderers provide essential, secure animal disease control and waste disposal services to Government and its agencies, for example, during the 2001 UK foot and mouth crisis. Further information about biosecurity is given in the factsheet *Animal By-products and Biosecurity*[2].

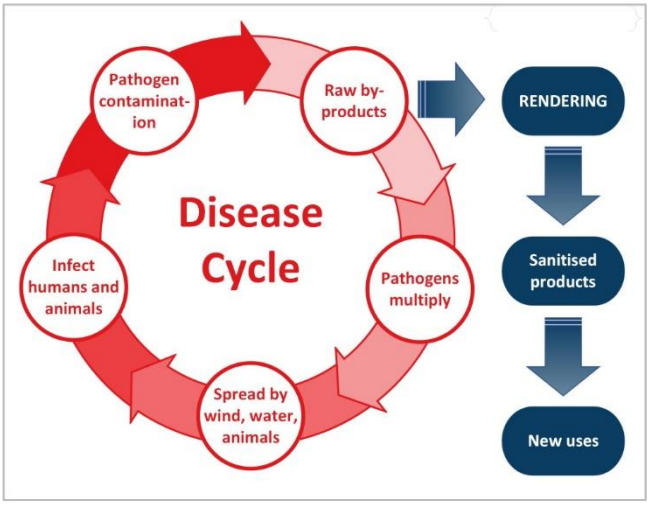

Figure 5 - Rendering breaks the disease cycle

REGULATORY CONTROLS IN THE UK

All aspects of the rendering process are highly regulated, including the use of ABP-derived products. There are also environmental regulations controlling emissions and consumptions, waste disposal and carbon emissions. Refer to the factsheet *Animal By-Products - Regulatory Controls*[5].

REFERENCES

1. What are Animal By-products? Factsheet FABRA-FS-001.
2. Rendering – Animal Products and Biosecurity – Factsheet FABRA-FS-005.
3. Rendering – Outlets for Rendered Products – Factsheet FABRA-FS-008.
4. The Circular Economy and Animal By-products – Factsheet FABRA-FS-004.
5. Animal By-products – Regulatory Controls – Factsheet FABRA-FS-006.