ASSOGRASSI
ASSOCIAZIONE NAZIONALE PRODUTTORI GRASSI E PROTEINE ANIMALI

EFPRA
DRIVING FOOD CHAIN SECURITY AND SUSTAINABILITY IN EUROPE

Case Study 16

Sustainably Dealing with Avian Influenza Outbreak in Italy

In response to the unprecedented 2021 – 2022 outbreak of the highly pathogenic H5N1 avian influenza (AI) in Italy, culled birds from infected poultry farms were safely transported and disposed of at several animal by-product processing plants across Italy.

These plants provide essential biosecurity, segregating bio-risk material from the environment and making it safe by thermal treatment. The benefit of this disposal route over others is that the products derived from the condemned material have sustainable applications, giving additional value to the otherwise waste material.

The condemned material is Category 2 animal by-products (ABP) material and can be processed in either Category 1 or 2 processing plants. It is converted into meat and bonemeal (MBM) and animal fat which are used in fertiliser and energy recovery applications. Obtaining some value from this material is very important to the poultry farmers who suffer huge financial losses when infected livestock is diverted away from food production routes.

"Sustainable processing of AI condemned material was undertaken at EFPRA members' sites as the AI outbreak spread across continental Europe"

During the avian influenza outbreak in the Provincia di Verona / Regione Veneto, 34.000 tonnes of condemned material (broilers, egg layers, turkeys and others) were disposed of at 9 Italian rendering plants across the country. The locations of the sites by region and type of ABP category material processed is illustrated in Figure 1.

The exact amounts of condemned material processed in Category 1 and 2 plants is unavailable but Italian rendering association, Assograssi estimate that, based on a 20:80 split of the condemned material, around 14.400 tonnes of products were derived. This is illustrated in Figure 2:

Figure 1: Location of Category 1 and 2 processing facilities

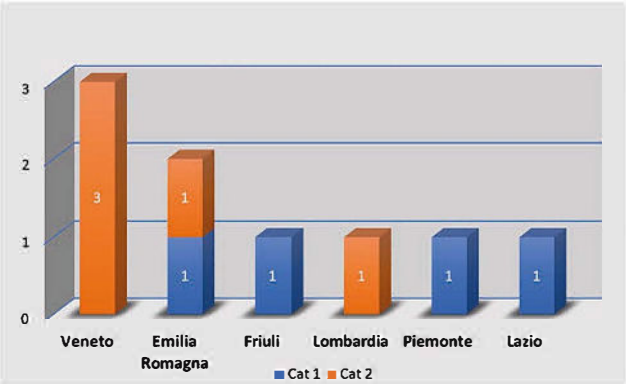
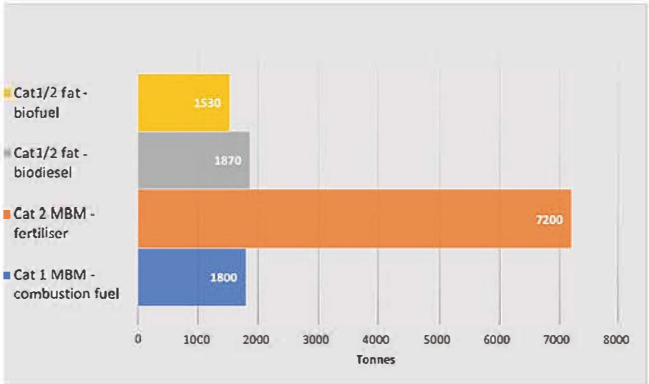


Figure 2: Derived product applications from AI condemned material



The use of the derived products in sustainable applications helps mitigate climate change by reducing the CO_2 emissions from fossil fuels. For example, animal fat, used as a biofuel in an engine for electricity production has around 35MJ/kg of energy while MBM, combusted in a combined heat and power plant (CHP) has around 14 MJ/kg (10 gCO_2eq/MJ).

Utilising natural nitrogen and phosphorous in the MBM (minimum 8% nitrogen and 4% phosphorus) as fertiliser replaces primary, scarce fertiliser ingredients and avoids the associated emissions from their extraction and manufacture into fertiliser. Some condemned material was also processed directly in a biosecure biogas plant.