

Agricultural processing brochure

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Processed meat groups:

- **Whole** meat products
- **Minced** meat products
- **Emulsified** meat products

Yield:
0.438kg
of raw liver
will yield
approximately
1kg
of liver spread

South African farmers facing current economic realities are searching for new options to maintain or expand their businesses. One of the many opportunities to grow markets, turnover and profits is by adding value to farm produce. Options need to be selected carefully based on sound information and knowledge of the opportunities presenting themselves, taking into account the strengths and weaknesses of individual farms.

Introduction

Product group: Meat products

The deregulation of the meat industry has provided opportunities for livestock farmers to slaughter, process and market their own animals. Abattoirs on farms are quite common these days.

Alternatively, approved meat can be brought in for processing. Meat is a very versatile food substance, with a wide variety of processed product possibilities. Processed meat products are classified into three broad groups, based on the size of the meat particle used:

- **Whole meat product;** muscle tissue is still clearly recognisable and defined in the end product (e.g. ham, bacon, pressed pork or beef);
- **Minced meat products;** meat structure has undergone a degree of breaking up for example in a mincer and the meat is no longer in a fibre form, but particle form (e.g. salami, fresh sausage, hamburger patties, meat balls etc.); and
- **Emulsified meat products;** the muscle tissues have been finely minced and are not recognisable any more in the fibrous or particle form (e.g. frankfurters, viennas, polonies and meatloaves).

Product description

Liver Spread

Liver spread contains approximately 30% liver and 30% beef flank. The remaining ingredients are lard, water, emulsifiers, salt and spices. The ingredients are chopped and combined to produce an emulsified mixture. It is stuffed in pre-printed plastic casings or natural casings (intestines). The "sausage" is then cooked to solidify the mixture.

Process description: Liver Spread

Ingredients for liver spread

The ingredients used include pork liver, beef trimmings, lard, sodium caseinate (casein), boiling water and seasonings. A ready prepared seasoning mix which usually includes salt, nitrite, spices, onion powder and soy isolate can be bought from spice dealers.

Trimming of Livers

Livers are trimmed manually using sharp knives to remove undesirable fat, sinew, veins and any other unwanted attachments. The trimmed livers are then washed to remove blood. Livers can be leached in salt water (20° on a Salometer – salinity of the water) after being slashed. Scalding of livers is optional and involves immersing the liver in boiling water to remove the mucus layer covering the liver.

Chopping of ingredients for liver spread

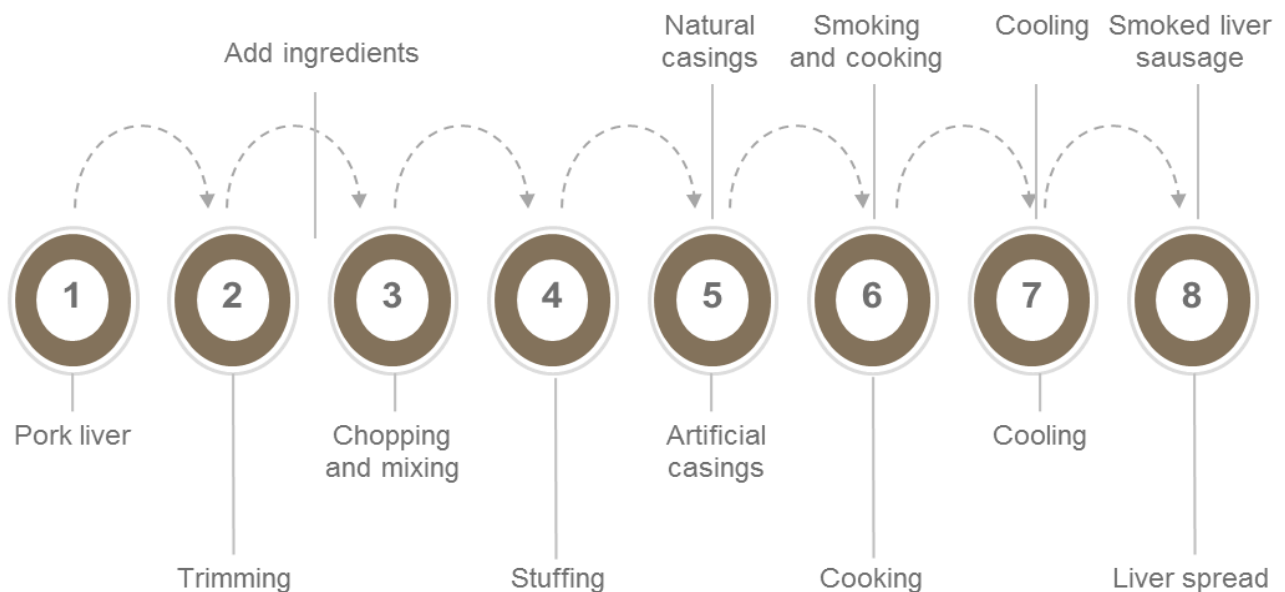
Livers are chopped to a smooth, textured liquid in a bowl cutter. If fresh onions are used, they are peeled and added along with the livers for chopping. Salt and curing agents (nitrite) are added to the chopped liver and onion, and chopping is resumed.

The lard is minced through a fine screen and cooked for 10 minutes in boiling water before being added to the liver. All the other remaining ingredients are now added and mixed in the bowl cutter until the desired level of emulsification and consistency has been reached.

Stuffing of liver spread

The liver mixture is stuffed into moisture-proof plastic casings and sealed with string or metal clips using a sausage stuffer. The mixture should not be stuffed too tightly, since raw liver expands upon cooking and could cause the casing to burst. Natural casings such as intestines can also be used, especially if the product is to be smoked.

Process overview



Cooking of liver spread

The stuffed sausages are cooked in hot water at 74°C until the internal temperature of the product reaches 68°C. Overcooking can cause burst casings. Cooking temperatures in excess of 74°C can result in fat separation and the formation of gelatine pockets. Cooking results in the setting and shaping of the mixture in the form of a sausage.

Smoking of liver spread (optional)

If the liver spread mixture is stuffed into natural casings, it can be smoked to produce a sausage known as "braunschweiger", a smoked liver sausage. Smoking flavours and cooks the sausage. The smoking temperature must not be too low as this could cause the formation of objectionable, dark rings. Smoke essence may also be included in the formula to replace the traditional smoking procedure, followed by a conventional cooking process.

Cooling of leaver spread

The packaged cooked liver spread is rinsed under cold water showers to reduce the temperature, prevent overcooking and remove any adhering particles. The sausages are further cooled in cold storage rooms and kept under these conditions throughout distribution and retail display. Smoked liver sausage should be cooled very carefully to prevent loss of flavour through leaching.

Labelling of meat products

The products are labelled/printed with the necessary information. Labelling in South Africa is controlled by legislation. Anyone who wants to use the information provided in this document must familiarise him/herself with all the applicable laws that apply to the producing, processing, manufacturing and storage of the products referred to in this document.

Other processing option

Edible meat by-products

Below is an alphabetic list of other processing options in this category not covered in this report, but available from Eskom

- **Blood meal** is produced from blood that is hygienically recovered during the slaughtering process. The blood is dried in various ways. Blood processing produces three major products, namely *whole blood meal*, *plasma* and *red blood cells*
- **Canned tongue** is tongue that has been pickled and then heat processed in cans.
- **Cooked tongue** is tongue that has been pickled, cooked, sliced (optional) and vacuum packaged for retail outlets. All types of tongue can be pickled, including beef, lamb, sheep and pig.
- **Pickled tongue** is a neatly trimmed beef, lamb or pork tongue that is free of bone, epiglottis, external fat, glands and skin that has been cured.



Energy Advisory Services

Eskom's role is to aid the client with basic information in the decision-making process. Thereafter the Eskom Advisor will fulfil the role of energy advisor as part of the team that the farmer selects.

Optimise your energy use:

Eskom's Energy Advisors, in regions across South Africa, offer advice to business customers on how to optimise their energy use by:

- Understanding their energy needs
- Understanding their electrical systems and processes
- Investigating the latest technology and process developments, including electric infrared heating and drying systems
- Analysing how to reduce energy investment costs
- Optimising energy use patterns in order to grow businesses and industries

Call **08600 37566**, leave your name and number and request that an Energy Advisor in your region contacts you. Alternatively, e-mail an enquiry to advisoryservices@eskom.co.za.

Alternative funding

Five alternative funding product offerings are available to help reduce your investment costs for new agro-processing or agro-beneficiation businesses or to expand/improve an existing agro-processing or agro-Beneficiation business. For more info visit::

<http://www.eskom.co.za/sites/idm/Business/Pages/Alternativefunding.aspx>

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