



FISH AND SEA FOOD PROCESSING: 34

BY-PRODUCT UTILIZATION: Meat and Poultry Industry

□ TECH. OF MEAT, POULTRY , FISH AND SEAFOOD PRODUCTS:

(Module No. 34)

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Introduction: (By-Product Utilization: Meat and Poultry Industry)

- ❑ By-products are efficiently utilized for the conversion of value added food and non-food products and Efficient utilization of by-products has direct impact on the economy and environmental.
- ❑ Blood, liver, lung, kidney, brains, spleen and tripe have good nutritive value.
- ❑ Treated fish waste has found many applications among with which the most important are animal.
- ❑ Under utilization of by-products not only lead to loss of potential revenues but also lead to the added and increasing cost of disposal of these products.
- ❑ Non-utilization of animal by-products in a proper way may create major aesthetic and catastrophic health problems.

Utilization of Blood

- In Europe, animal blood has long been used to make blood sausages, blood pudding, biscuits and bread. In Asia, it is used in blood curd, blood cake and blood pudding.
- It is also used for non-food items such as fertilizer, feedstuffs and binders.
- Blood plasma also has an excellent foaming capacity and can be used to replace egg whites in the baking industry.

Utilization of hides & Skins

- The hides represent a remarkable portion of the weight of the live animal, from 4% to as much as 11% (e.g. cattle: 5.1– 8.5%, average: 7.0%; sheep: 11.0–11.7%; swine: 3.0– 8.0%).
- Animal hides have been used for shelters, clothing and as containers by human beings since prehistoric times.
- Hides and skins are generally one of the most valuable by-products from animals.
- Finished products from the hides of cattle and pigs, and from sheep pelts, are **leather shoes and bags**, rawhide, athletic equipment, reformed sausage casing and cosmetic products, sausage skins, edible gelatine and glue.

Utilization of Bones

- Eleven percent of pork carcasses, 15% of beef carcasses and 16% of lamb carcasses are bone.
- The marrow inside some of the bones can also be used as food.
- The marrow may be 4.0–6.0% of the carcass weight.
- For centuries, bones have been used to make soup and gelatin.
- The beef, pork or lamb produced by mechanical deboning produces tissue that is called “mechanically separated”, “mechanically deboned” or “mechanically removed”.
- Such meat is now approved for use in meat products (mixed or used alone) in many countries.

Utilization of Gland & Organs

- ❑ Organs and glands offer a wide variety of flavors and textures, and often have a high nutritional value.
- ❑ They are highly prized as food in many parts of the world, particularly Southeast Asia.
- ❑ Those used as human foods include the brain, heart, kidneys, liver, lungs and spleen.
- ❑ They also include the tongue, the bovine pancreas and udder, the stomach and uterus of pigs, the rumen, reticulum, omasum and abomasum of sheep and cattle, and the testes and thymus of sheep and pigs.

Utilization of Edible Tallow & Lard

- ❑ Fats from animal after slaughtering are an important by-product of the meat packing industry. The major edible animal fats are lard and tallow.
- ❑ Lard is the fat rendered from the clean tissues of healthy pigs. Lard and edible tallow are obtained by dry or wet rendering.
- ❑ Tallow is hard fat rendered from the fatty tissues of cattle or sheep.
- ❑ In the wet rendering process, the fatty tissues are heated in the presence of water, generally at a low temperature.
- ❑ The quality of the lard or tallow from this process is better than that of products from dry rendering. Low-quality lard, and almost all of the inedible tallow and greases, are produced by dry rendering.

Utilization of Poultry by - Product

- USA is engaged in conversion of wastes to valuable products and the work being supported by various organization, agencies, companies etc.
- The intensive and large scale production of food animals and animal products has generated an enormous disposal problem for the animal industry.
- These wastes, including animal excreta, mortalities, hair, feathers and processing wastes are convertible to useful resources.
- An efficient thermophilic anaerobic digester system that converts animal manure to methane for an energy source was reported by Shih
- The keratinase is a potent proteinase that hydrolyses collagen, elastin and feather keratin Emulsion—based mutton nuggets, incorporating chicken by-products, i.e., skin, gizzard and heart.

Future Reading

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