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DOCUMENT
By-Products Backbone of the Meats Industry



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Did you know that by-products of the meats industry (stearic acid) are necessary for the manufacturing of automobile tires? Or that steel ball bearings could not be produced without bone charcoal? Over 100 pharmaceuticals come from animal sources. Hundreds of items that affect our daily lives come directly or indirectly from the meats industry.

The importance of the tremendous quantity of vital nutrients supplied by beef, pork and lamb is well documented. However, a viable animal agriculture contributes much more to the quality of American life in essential and useful by-products.

By-products are everything of value produced on the killing floor, other than the dressed carcass, and are classified as edible and inedible. Some of the edible by-products are listed in Table 1. They range from the variety meats, to oil stock which is used for margarine and baker's shortening, to intestines which are used for sausage casings and chitterlings. Sweetbreads (thymus gland) are considered a gourmet's delight. Blood is a necessary component for certain sausages and blood puddings.

Table 1. Edible By-Products

Liver	Sweetbreads	Gelatin
Hearts	Tripe	Margarine
Tongues	Oxtails	Baker's Shortening
Brains	Chitterlings	Candy
Blood	Kidneys	Gum

The inedible by-products from the meats industry are so varied and useful that one does not even realize that they are a part of the meats industry. These products range from fine china to cosmetics to animal feeds.

INEDIBLE BY-PRODUCTS

Tallows & Grease

- . Animal feeds
- . Soap production
- . Glycerin
 - Used in medical profession
 - Manufacture nitroglycerin (100 lbs. fat = 24.5 lbs. nitroglycerin)
- . Lubricants
- . Fatty acids - for synthetic rubber, shaving cream, asphalt tile, cleaners, cosmetics, deodorants, perfumes

Bones, Horns, Hooves

- . Tankage - animal feeds, fertilizers
- . Buttons, bone china, glues
- . Non-edible gelatin - photographic film, printing process
- . Neatsfoot oil
- . Bone charcoal - production of high grade steel, ball bearings

Skins

- . Beef hides - three types of leather (latigo, suede, tooling), felt, textiles, bases for ointments, hide trimmings, manufacture glue and gelatin
- . Sheep skins - wool for clothing, rugs, cloth lanolin, leather (best wearing)
- . Hog skins - most common use-leather for gloves, pocket books, handbags, brief cases; pharmaceuticals for severe burns
- . Hair - insulation and rug pads, automobile upholstery, artists' camel brushes
- . Hide - glue



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Pharmaceuticals - Domestic Animals are Walking Storehouses for a Variety of Life-Saving, Life-Improving Drugs, More Than 100 Known and Currently Used.

Blood

- Prothrombin and Fibrinogen - used in blood clotting mechanism
- Fibrinolysin - removal of dead tissue
- Albumin - detect presence of tuberculosis, used to test RH factor, source of amino acids in treatment of sterility

Glands

- Pancreas
 - Insulin - for diabetics
 - Chymotrypsin and Trypsin - proteolytic enzymes used to cleanse wounds and remove dead tissue
 - Glucagon - used to counteract insulin shock, specialized treatment for some psychiatric disorders
- Thyroid - treatment of cretinism
- Parathyroid - regulates calcium content of blood, maintains tone of nervous system
- Adrenals - Cortex produces steroid secretions essential to life - prevents Addison's Disease. Medulla - epinephrine to arrest hemorrhage and stimulate heart action
- Lungs
 - Heparin - important anti-coagulant, used as a gangrene preventive in case of frost-bite and as a burn treatment

- Pituitary

- Corticotropin (ACTH) - used in treatment of psoriasis; control of severe allergic reactions, anemia, infectious mononucleosis
- Stomach
 - Pepsin - used to aid in protein digestion
 - Rennin - used to help infants digest milk and in cheese making
- Ox Gall
 - Cortisone - mostly made synthetically

Pharmaceuticals are probably the most important by-products from the meats industry because they perform such vital functions as helping make childbirth safer or helping babies digest milk. They are used for treatment of severe burns and the list goes on and on.

The meats industry is constantly aware of the ecological impact of fecal wastes and rumen contents on our environment. It has made tremendous strides in using this material as fertilizer, and, more recently, sterilized products have been developed as animal feeds. Animal waste is also a potential energy source in the form of methane gas production.