



Mata Kuliah

# Ilmu dan Teknologi Pengolahan Hasil Ikutan Ternak

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## Pengertian hasil ikutan (by-product)

- Hasil ikutan adalah hasil peternakan yang bukan hasil (produk) utama
- By-product akan mempunyai nilai tambah ketika sudah melalui proses pengolahan sehingga bisa dimanfaatkan



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graph TD; A[By-product] --> B[Edible by-product:]; A --> C[inedible by-product:];
```

By-product

Edible by-product:

inedible by-product:

# Edible product

Raw by-product	Principal use
Brains	Variety meat
Liver	Variety meat
Heart	Variety meat
Kidneys	Variety meat
Spleen (melt)	Variety meat
Sweetbreads	Variety meat
Tongue	Variety meat
Oxtails	Variety meat
Cheek and head trimmings	Sausage ingredient
Beef extract	Soups and bouillon
blood	Sausage component

# Cont.

Raw by-product	Principal use
stomach	
(a) Suckling calves	Rennet for cheesemaking
(b) Pork	Sausage container, ingredient
(c) Beef (1st and 2nd)	Sausage ingredient, tripe
Bones	Gelatin for confectioneries, ice cream, and jellied food products
Fats	
(a) Cattle, calves, lambs & sheep	Shortening, candies, chewing gum
(b) Pork	Shortening (lard)
Intestines, small	Sausage casings
Intestines, large (pork)	Chitterlings
Intestines, large	Sausage casings
Esophagus (weasand)	Sausage ingredient
Pork skins	Gelatin for confectioneries, ice cream and jellied food products; french fried pork
Calf skin trimmings	Gelatin for confectioneries, ice cream, and jellied food products

# inedible by-product

Hide (cattle and calves)	Leather and glue	numerous leather goods paper boxes sandpaper plywood
	Hair	felts plaster binder uphostery
Pork skins	Tanned skin	leather goods
Pelts	Wool	textiles
	Skin	leather goods
	Lanolin	ointments
Fats	Inedible tallow	industrial oils
		lubricants
		glycerin

# Cont.

	Tankage	livestock and poultry feeds
	Cracklings	
	Stick	
	Grease	industrial oils animal feeds
Bones	Dry bone	glue hardening steel
	Bone meal	animal feed
		fertilizer
	Blood albumen	leather preparations textile sizing
Cattle feet ns	Neatsfoot stock	fine lubricants
	Neatsfoot oil	leather preparatio
Glands	Pharmaceuticals medicines	Enzyme preparations
	Enzyme preparations	industrial uses
Lungs		pet foods

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# Skin, hide, pelts

- Skin: calf
- Hide: cow, steer, bull





# fat

- Tallow: congealing point above 40° C
- Greases: under 40° C



# Animal Feeds and Fertilizers

- Dried blood (blood meal) -- made by coagulating fresh blood with steam, draining off the liquid, and drying the coagulum. Meat meal -- made from the proteinaceous materials from the inedible rendering process.
- Steamed bone meal -- made by cooking bones with steam, under a high pressure, in order to remove any fat and meat that may be left on them.



# Gelatin and Glue

- Gelatin -- made from skins or hides, connective tissues, cartilage, and bones of cattle and calves. Cooking in water converts the collagen in these materials to gelatin
- Glue -- made from the same items as gelatin, but is extracted from these materials by successive heatings in water under specific temperature conditions.

# Pharmaceuticals

## I. Glands

- Adrenal -- epinephrine is extracted from the adrenal medulla and adrenocortical extract from the adrenal cortex.
- Ovaries -- used as a source of estrogens and progesterone.
- Pancreas -- yields insulin and trypsin.
- Parathyroid -- parathyroid hormone extract is used to prevent large scale muscular rigidity.
- Pituitary -- source of ACTH (adrenocorticotrophic hormone).
- Testes -- source of hyaluronidase.
- Thyroid -- source of thyroxine and calcitonin.

## 2. Tissues and Organs

- Blood -- source of albumin and amino acids.  
Bone -- source of calcium and phosphorous.
- Intestines -- surgical sutures and condoms.
- Liver -- liver extracts and bile extract, which can be used to make cortisone.
- Lungs -- heparin
- Spinal cord -- source of cholesterol, which is used to manufacture vitamin D.
- Stomach -- rennet (from calves), mucin (from pigs), and pepsin (from pigs).



# Other by-products

- Fetal calf blood -- used for cancer and AIDS research.
- Aorta valves -- for replacement of defective human heart valves.
- Fetal pigs -- used for biology teaching.
- Gall stones -- sold as aphrodisiacs in the Far East.



**sekian**

- Terima kasih