



Beyond the Beef

Overview

This lesson focuses on the many products that are derived from beef cattle beyond just meat and meat products. Students will see that animal agriculture is an important part of their everyday lives.

Suggested Grade Level

6 - 8

Estimated Time

One-half a class period plus time at home or in the community.

Objectives

Students will be able to:

1. identify products they use every day that contain beef by-products
2. understand the importance of animal agriculture in their everyday lives

Materials

1. Background Information Sheets
2. Activity Sheet

Background

A steer is a lot more than steak and roast beef. Cattle by-products are a part of many manufactured items that we use every day and their use enables us to use 99% of every animal.

You may normally think of beef as a hamburger, steak or a roast, which are served at meal times. But there are other edible parts besides the protein-packed muscle. The variety meats, such as livers and hearts, are just two of the many alternatives that are used in gourmet dishes. There are also edible by-products that are not quite so obvious. Do you know that gelatins in products such as ice cream and yogurt are made from the hooves, horns, hide and bones of the cow? Cattle provide a portion of the ingredients in manufactured products such as chewing gum. People depend on cattle for ingredients in many food products.

“What do beef cattle have to do with me? I don’t have any in my backyard!” This might be your first reaction to the statement above. However, items manufactured from beef by-products are part of our daily environment. The soap

you washed with this morning; the baseball equipment in the closet; or even the paint on the walls of your home – all of these contain a beef by-product.

Tires have stearic acid from beef cattle, which makes the rubber hold its shape under continuous surface friction. Even the asphalt on our roadways has a binding agent from beef fat. Beef by-products are used in all sorts of mechanical items. Chemical manufacturers use numerous fatty acids from inedible beef fats and proteins for all sorts of lubricants and fluids.

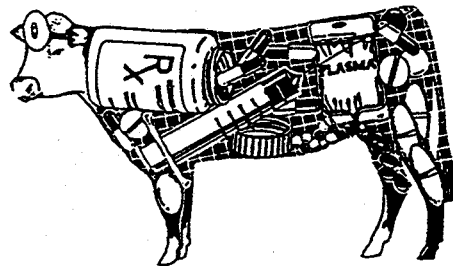
Activity

1. Brainstorm with students what products they think come from beef cattle.
2. Have students read over the Background Information on some of the products made from beef cattle.
3. Ask how many of the items are part of their everyday lives?
4. Using the Activity Sheet, have students complete an investigation of products they have at home that come from beef cattle.

Extensions

1. Have students list (in a journal) the number of products they encounter throughout a whole day that come from beef cattle. Discuss in class the next day.
2. Find the nearest beef cattle producer in your state. Go on a visit to the farm/ranch or invite the producer to speak to the class about raising beef.

Adapted from The American National Cattlewomen, Inc.



Beyond the Beef - Background Information

Beef in Your Meal

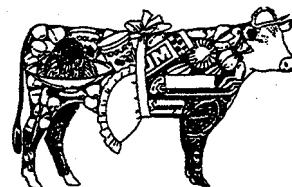
You may normally think of beef as a hamburger, steak or delicious roast for a satisfying meal. But there are other edible parts besides the protein-packed muscle. The variety meats, such as liver and heart, are just two of the many tasty alternatives that are used in gourmet dishes.

There are also edible by-products that are not quite so obvious. Do you know that gelatins in products such as ice cream and yogurt are made from the hooves, horns, hide and bones of the cow?

Cattle provide a portion of the ingredients in manufactured products such as chewing gum. People depend on cattle for ingredients to make food products such as these:

sausage
candies
chewing gum
clarification agents for
juice, wine and beer
consume
cookies
gelatin in salads/desserts
head cheese
ice cream

marshmallows
mayonnaise
oleo shortening
pate
sausage casings
yogurt
variety meats
liver, heart
tongue, kidneys



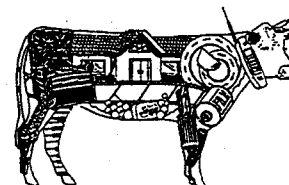
Beef at Work, Play and in the Home

“What do cows have to do with me. I don’t have one in my backyard!” This might be your first reaction to the statement above. However, items manufactured from beef by-products are part of our daily environment.

The soap you washed with this morning; the baseball equipment in the closet; or even the paint of the walls of your home – all of these contain a beef by-product. The following contain one or more beef by-products:

bone china
bonemeal biscuits
boots and shoes
candles
cosmetics
crayons
deodorants
detergents
doggie chews
fabric softeners
floor wax
glue
insecticides

leather sporting goods
luggage
paint
pet foods
photographic film
plastics
shampoo/cream rinses
shaving cream
soaps
textiles
toothpaste
upholstery
violin strings



Beyond the Beef - Background InformationBeef in the Pharmacy

The medical world also relies on this resource for the pharmaceutical wonders it produces and uses. This is because cattle have great similarities in organic chemical structure to humans. Our bodies will easily accept a medication or treatment made with these animal components. Some products are synthesized. However, many are still made more economically from cattle.

Insulin – treatment of diabetes

Heparin – prolongs the time needed for blood to clot

Corticotrophin – used in the treatment of allergies, rheumatoid arthritis, rheumatic fever, and respiratory diseases

Thyrotropin – stimulates the thyroid gland

Parathyroid hormone – used to treat parathyroid deficiencies

Thrombin – promotes coagulation during surgery

Glucagon – treats hypoglycemia (low blood sugar)

Sodium levothyroxine – thyroid replacement therapy

Fibrinolysin – treatment of blood clots within the cardiovascular system

Pancreatin – treatment of infants with celiac disease (gluten intolerance) and related pancreatic deficiencies

Thyroid – treats myxedema (metabolic disease caused by deficient action of the thyroid gland) in adults and cretinism (deformity and mental retardation in children)

Parathyroid hormone – used to treat parathyroid deficiencies

Beef on the Road

Tires have stearic acid that makes the rubber hold its shape under continuous surface friction. Even the asphalt on our roadways has a binding agent from fat. Some other unusual but necessary products are:

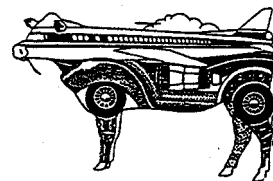
asphalt

rubber tires

textiles for upholstery

car polishes and waxes

hydraulic brake fluid

Beef in Industry

Beef by-products are used in all sorts of mechanical items. Chemical manufacturers use numerous fatty acids from inedible beef fats and proteins for all sorts of lubricants and fluids.

animal feed

cement blocks

explosives

fertilizers

high gloss for magazines

industrial cleaners

lubricants

molds for plastics

printing ink

whitener for paper

Beyond the Beef - Activity Sheet

“What do beef cattle have to do with me? I don’t have any in my backyard!”
Virtually the entire beef animal (99%) is used for something, but only 41% of it is used as meat. The rest of the steer is used to provide products we use daily.

Using the Beyond the Beef Background Information Sheet, see how many things you can find in your home that come from a beef animal. List products below.

Beef in Your Meal

Beef in Industry / On-the-Road

Beef at Work, Play, and Home

Beef in the Pharmacy
