

Ground beef

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Ground beef, **beef mince**, **minced beef**, **minced meat** is a ground meat made of beef that has been finely chopped with a large knife or a meat grinder. It is used in many recipes including hamburgers and spaghetti bolognese. In some parts of the world, meat grinders are called mincers.

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In many countries, food laws define specific categories of ground beef and what they can contain. For example, in the United States, beef fat may be added to hamburger but not to ground beef if the meat is ground and packaged at a USDA-inspected plant.^[note 1] In the U.S., a maximum of 30% fat by weight is allowed in either hamburger or ground beef. The allowable amount in France is 5 to 20% (15% being used by



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most food chains). In Germany, regular ground beef may contain up to 15% fat while the special "Tatar" for *steak tartare* may contain less than 5% fat. Both hamburger and ground beef can have added seasoning, phosphate, extenders, or binders added; but no additional water is permitted. Ground beef is often marketed in a range of different fat contents to match the preferences of customers.

Ground beef is generally made from the less tender and less popular cuts of beef. Trimmings from tender cuts may also be used.^[1]

In a study in the U.S. in 2008, eight brands of fast food hamburgers were evaluated for recognizable tissue types using morphological techniques that are commonly used in the evaluation of tissue's histological condition.^[2] The study of the eight laboratory specimens found the content of the hamburgers included:

- Water: 37.7% to 62.4% (mean, 49%)
- Muscle: 2.1% to 14.8% (median, 12.1%)
- Skeletal tissue: "Bone and cartilage, observed in some brands, were not expected; their presence may be related to the use of mechanical separation in the processing of the meat from the animal. Small amounts of bone and cartilage may have been detached during the separation process."
- Connective tissue
- Blood vessels
- Peripheral nerve tissue. Brain tissue was not detected in any of the samples.
- Adipose tissue—"The amount of lipid observed was considerable and was seen in both adipose tissue and as lipid droplets. Lipid content on oil-red-O staining was graded as 1+ (moderate) in 6 burgers and 2+ (marked) in 2 burgers."
- Plant material: "was likely added as a filler to give bulk to the burger"

"Pink Slime"

Ground beef may contain a meat-based product used as a food additive produced using technology known as advanced meat recovery systems. Meat processing methods used by companies such as Beef Products, Inc. (BPI) and Cargill Meat Solutions produce lean, finely textured beef product, otherwise known as "pink

slime", from fatty beef trimmings. This meat-based product has to be treated with an antimicrobial agent to remove salmonella and other pathogens, and is included in a wide variety of ground beef products in the U.S.^[3] From 2001 the United States Department of Agriculture (USDA) has approved the product for limited human consumption. In a 2009 article by *The New York Times*, the safety of the beef processing method used by BPI was questioned.^[4] After the USDA's approval, this product became a component in ground beef used by McDonald's, Burger King and many other fast-food chains as well as grocery chains in the U.S.^[4] In government and industry records in testing for the school lunch program, pathogens such as *E. coli* and salmonella were found dozens of times in meat from BPI, which raises questions about safety of the meat product and the effectiveness of the antimicrobial method used in meat recovery system of the company. Between 2005 and 2009, *E. coli* was found three times and salmonella 48 times.^[4] BPI had a rate of 36 positives for salmonella per 1,000 tests, compared to a rate of nine positives per 1,000 tests for other suppliers for the program.^[4] However, the program continued to source from BPI because its price was substantially lower than ordinary meat trimmings, saving about \$1m a year for the program.^[4] Cargill, among the largest hamburger makers in the U.S., is a big buyer of the meat-based product from BPI for its patties, according to the Times.^[4] It suspended buying meat from two plants owned by BPI for several months in 2006 after excessive levels of salmonella were found.^[4]

Cuts of beef

Although any type of beef cut may be used to produce ground beef, chuck steak is a popular choice because of its richness of flavor and balance of meat-to-fat ratio. Round steak is also often used. Ground beef is usually subdivided based on the cut and fat percentage:^[5]

- Chuck: 78–84% lean
- Round: 85–89% lean
- Sirloin: 90–95% lean

Culinary use

Ground beef is popular as a relatively cheap and quick-cooking form of beef. Some of its best-known uses are in hamburgers, sausages and cottage pies. It is an important ingredient in meatloaf, sloppy joes, tacos, and Midwestern cuisine. Italians use it to make meat sauces, for example, lasagna and spaghetti bolognese. In the Middle East, it is used to make spicy kofta and meatballs. The Scottish dish mince and tatties uses it with mashed or boiled potatoes. In Lancashire, particularly Oldham, minced meat is a common filling for rag pudding. The Dutch slavink consists of ground beef (half beef, half pork) rolled in bacon.

Raw, lean, ground beef is used to make steak tartare, a French dish. More finely diced and differently seasoned, it is popular as a main course and as a dressing in Belgium, where it is known as filet américain ("American fillet"). Picadillo is a Spanish term for ground beef, and is a common ingredient in several Latin American cuisines. Picadillo with chili pepper and finely diced onion and potato is a common filling for tacos and gorditas in Mexico.

Food safety

Food safety of ground meat issues occur because of the possibility of bacterial contamination. Undercooked hamburgers contaminated with *E. coli* O157:H7 were responsible for four deaths and the illness of hundreds of people in the U.S. in 1993.^[6] Ground beef must be cooked to 72 °C (160 °F) to ensure all bacterial contamination—whether it be endogenous to the product or contaminated after purchasing by the consumer—is killed. The color of cooked meat does not always indicate the beef has reached the required temperature; beef can brown before reaching 68 °C (155 °F).^[7]

To ensure the safety of food distributed through the National School Lunch Program, food banks, and other federal food and nutrition programs, the United States Department of Agriculture has established food safety and quality requirements for the ground beef it purchases. A 2010 National Research Council report reviewed the scientific basis of the Department's ground beef

safety standards, compared the standards to those used by large retail and commercial food service purchasers of ground beef, and examined ways to establish periodic evaluations of the Federal Purchase Ground Beef Program.^[8] The report found that although the safety requirements could be strengthened using scientific concepts, the prevention of future outbreaks of foodborne diseases will depend on eliminating contamination during production and ensuring meat is properly cooked before it is served.^[9]

See also

- Ground meat
- Patty
- List of hamburgers
- Pink slime

Notes

1. These rules only apply to meat being sold across state lines. In the U.S., much ground beef is produced at local grocery stores and is not sold across state lines. In these cases the laws of the local state apply; state laws can have the same or different requirements.

References

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External links

- Ground Beef Safety at About.com (<http://culinaryarts.about.com/od/meatpoultryseafood/a/grndbeefsafety.htm>)

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