



Decoding Food Labels

In the U.S., we are privileged to have so many food choices. When purchasing items at the grocery store, consumers can choose from products labeled as natural, organic, and free-range, among others. But what do all those labels really mean?¹

CHICKENS

Cage free: *This label indicates that the flock was able to freely roam a building, room, or enclosed area with unlimited access to food and fresh water during their production cycle.*

- o *Note: There are no regulations for outdoor access with the cage-free label.*

Free range or free roaming: *Producers must demonstrate to the USDA that the poultry has been allowed access to the outside.*

BEEF

Grass-fed (or forage-fed): *Grass and forage shall be the feed source consumed for the lifetime of the ruminant animal (like cattle), with the exception of milk consumed prior to weaning. The diet shall be derived solely from forage consisting of grass, forbs (e.g., legumes, Brassica), browse (e.g. twigs, leaves), or cereal grain crops in the vegetative (pre-grain) state. Animals cannot be fed grain or grain byproducts and must have continuous access to pasture during the growing season. Hay, haylage, baleage, silage, crop residue without grain, and other roughage sources may also be included as acceptable feed sources. Routine mineral and vitamin supplementation may also be included in the feeding regimen. If incidental supplementation occurs due to inadvertent exposure to non-forage feedstuffs or to always ensure the animal's wellbeing during adverse environmental or physical conditions, the producer must fully document (e.g., receipts, ingredients, and tear tags) the supplementation that occurs including the amount, the frequency, and the supplements provided.*

Humane: Multiple labeling programs make claims that animals were treated humanely during the production cycle, but the verification of these claims varies widely. **These labeling programs are not regulated.**

Natural: As required by USDA, meat, poultry, and egg products labeled as "natural" must be **minimally processed and contain no artificial**

ingredients. However, the natural label does not include any standards regarding farm practices and only applies to processing of meat and egg products. There are no standards or regulations for the labeling of natural food products if they do not contain meat or eggs.

- o Note: Food products regulated by the FDA (everything except meat, poultry and processed egg) can also be labeled natural. The FDA notes that from a food science perspective, it is difficult to define a food product that is 'natural' because the food has probably been processed and is no longer the product of the earth. **The FDA has not developed a definition for use of the term natural or its derivatives.** However, **the agency has not objected to the use of the term if the food does not contain added color, artificial flavors, or synthetic substances.**

Naturally raised: Livestock used for the production of meat and meat products that have been **raised entirely without growth promotants, antibiotics** (except for ionophores used as coccidiostats for parasite control), **and have never been fed animal (mammalian, avian, or aquatic) by-products** derived from the slaughter/harvest processes, including meat and fat, animal waste materials (e.g., manure and litter), and aquatic by-products (e.g., fishmeal and fish oil).

No hormones (hogs and poultry): Hormones are not ever allowed in raising hogs or poultry. Therefore, the claim "no hormones added" cannot be used on the labels of pork or poultry unless it is followed by a statement that says "Federal regulations prohibit the use of hormones."

No hormones (beef): The term "no hormones administered" may be approved for use on the label of beef products if sufficient documentation is provided to the USDA by the producer showing no hormones have been used in raising the animals.

Confusion and concern often surround the use of hormones in beef production. These "chemical messengers" are substances produced in the body that travel through the bloodstream to regulate body functions such as reproduction, metabolism, and growth. Hormones such as estrogens or androgens are often administered to growing cattle intended for slaughter to promote growth by complementing the effects of naturally occurring hormones. These growth-promoting hormones are generally administered to cattle in the form of small pellets, termed 'implants', that are placed under the skin in the animal's ear. The boost in growth rate created by hormone implants allows for cattle to be finished earlier thereby requiring less time on feed and fewer resources per pound of meat produced.

A common myth surrounding beef produced with additional hormones is that it is unsafe to consume. The fact is that the U.S. Food and Drug Administration regulates the development and use of

hormone implants, and the Food Safety Inspection Service of the USDA routinely monitors residues of synthetic hormones in meat.

It is true that beef from hormone-implanted cattle has increased estrogenic activity compared with non-implanted beef. This fact alone may alarm beef consumers, but it must be put into the context of actual amount consumed and the levels found in other products. Beef from a non-implanted steer contains 0.85 units of estrogenic activity per 3 oz. serving, while beef from an implanted steer contains 1.2 units of estrogenic activity in the same serving. However, this amount is a fraction of what is found in many other common foods. For example, the same quantity of eggs would provide 94 units of estrogenic activity and a 3 oz. serving of tofu would provide 19,306,004 units of estrogenic activity. In fact, a normal adult male produces 136,000 ng of estrogen per day while a non-pregnant woman produces 513,000 ng/day on average, making consumption of the levels of estrogen in implanted beef relatively inconsequential.

It's important to understand that there is no such thing as "hormone-free" beef. Hormones are naturally occurring, and any amount of beef (or any animal product) will have some level of naturally occurring hormone present.²

Pasture-raised: Due to the number of variables involved in pasture-raised agricultural systems, **the USDA has not developed a labeling policy for pasture-raised products.**

No antibiotics (red meat and poultry): The terms "no antibiotics added" may be used on labels for meat or poultry products if sufficient documentation is provided by the producer to the USDA demonstrating that the animals were raised without antibiotics.

Labeling can be confusing. The important thing to know is all the poultry and meats in the grocery store don't have antibiotics. There are no antibiotics in it because of regulations in place. Even if a farm chooses to use antibiotics in their animals, there's a waiting period before that animal can go to the markets. Mechanisms are in place to test products such as meat and milk to make sure there are no antibiotics in food that is being eaten. Because of concerns about antibiotic resistance, in the United States, it is no longer allowed to use antibiotics for growth promotion.

Jeff Bender, DVM, MS, DACVPM, with the Center for Animal Health and Food Safety at the University of Minnesota explains, "Antibiotics are medications that we used to actually treat ill animals," Dr. Bender said. "It also could be used to prevent disease, so when we mix a group of animals together just like we mix children together at a

daycare, there's a chance for disease transmission to occur and sometimes those could be bacterial. And so, treatment, prevention and control are really the main ways that we use antibiotics." He explained that antibiotics are given to animals by farmers or ranchers under the supervision of a veterinarian. Dr. Bender gives this advice. "The food that we have in our grocery stores is good. It is inspected, there are regulations in place to really eliminate the possibility that there were antibiotics in there. Products that you buy at the grocery store, you should feel comfortable in consuming."³

PLANTS

Organic: Food or other agricultural products that have been produced without synthetic fertilizers, sewage sludge, irradiation, and genetic engineering. Organic production integrates cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.

- Note: Pesticides derived from natural sources (such as biological pesticides) may be used in producing organically-grown food.
- The National Organic Program regulates all organic crops, livestock, and agricultural products certified to the USDA organic standards. USDA conducts audits and ensures that the more than 90 organic certification agencies operating around the world are properly certifying organic products. In order to sell, label, or represent their products as organic, operations must follow all of the specifications set out by the USDA organic regulations.
- To know if your food is organic, look at the label. **If you see the USDA organic seal, the product is certified organic and has 95 percent or more organic content.** For multi-ingredient products such as bread or soup, if the label claims that it is made with specified organic ingredients, you can be confident that those specific ingredients have been certified organic.⁴

Why does it cost more for organic food?

The simple answer is that it costs more to farm organic food for the following reasons:

- Supply & Demand: Organic food supply is limited as compared to demand.
- Production costs for organic foods are typically higher because of greater labor inputs per unit of output and because greater diversity of enterprises means economies of scale cannot be achieved.
- Post-harvest handling of relatively small quantities of organic foods results in higher costs because of the mandatory segregation of

organic and conventional produce, especially for processing and transportation.

- Marketing and the distribution chain for organic products is relatively inefficient and costs are higher because of relatively small volumes.¹

Is it worth buying organic food?

Organic foods are usually good for the environment, but they're often hard on your wallet. The USDA found the costs of fruits and vegetables typically run more than 20% higher than conventional produce. Sometimes the difference is much higher, especially for things like organic milk and eggs.

Is organic food more nutritious than regular food?

Organic foods are not healthier, per se, in terms of nutrients. You are still getting the same benefits in conventionally grown foods as you are in organic foods.⁵

Some data shows possible health benefits of organic foods when compared with foods grown using the usual (conventional) process. These studies have shown differences in the food. But there is limited information to prove how these differences can give potential overall health benefits.

Potential benefits include the following:

- **Nutrients.** Studies have shown small to moderate increases in some nutrients in organic produce. Organic produce may have more of certain antioxidants and types of flavonoids, which have antioxidant properties.
- **Omega-3 fatty acids.** The feeding requirements for organic farm animals (livestock) usually cause higher levels of omega-3 fatty acids. These include feeding cattle grass and alfalfa. Omega-3 fatty acids — a kind of fat — are more heart healthy than other fats. These higher omega-3 fatty acids are found in organic meats, dairy and eggs.
- **Toxic metal.** Cadmium is a toxic chemical naturally found in soils and absorbed by plants. Studies have shown much lower cadmium levels in organic grains, but not fruits and vegetables, when compared with crops grown using usual (conventional) methods. The lower cadmium levels in organic grains may be related to the ban on synthetic fertilizers in organic farming.
- **Pesticide residue.** Compared with produce grown using usual (conventional) methods, organically grown produce has lower levels of pesticide residue. The safety rules for the highest levels of residue allowed on conventional produce have changed. In many cases, the levels have been lowered. Organic produce may have residue because of pesticides approved for organic farming or because of airborne pesticides from conventional farms.
- **Bacteria.** Meats produced using usual (conventional) methods may have higher amounts of dangerous types of bacteria that may not be able to be

treated with antibiotics. The overall risk of contamination of organic foods with bacteria is the same as conventional foods.⁶

¹Decoding Food Labels, <https://www.bestfoodfacts.org>

²South Dakota State University Extension, *Hormones in Beef: Myths vs. Facts*, Amanda Blair, Professor & SDSU Extension Meat Science Specialist

³<https://www.bestfoodfacts.org/antibiotics-in-chicken>

⁴Food and Agriculture Organization of the United Nations, Organic Agriculture

⁵ucdavis.edu, <https://health.ucdavis.edu/bkic/good-food/2019/04>

⁶Mayo Clinic, <https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/organic-food/art-20043880>, Organic Foods: Are They Safer? More Nutritious?