

Reason for Standard

Dairy provides an important nutrition source and culinary ingredient for many cultures and diets, but as industrial livestock production has grown over the past several decades, so have the animal welfare, climate, and human health impacts of raising animals for food.^{i, ii, iii}

Most animal welfare concerns pertain to large-scale, industrial livestock operations. Within these operations, large quantities of animals are housed and fed in crowded conditions usually without access to pasture or the outdoors. Animals in these operations frequently face abuse and psychological stress brought on by overcrowding and confinement.^{iv, v, vi} Industrial livestock operations often use synthetic growth hormones and antibiotics to speed growth rates and combat illness brought on by confinement and overcrowding. Some research suggests that residues of growth hormones or steroids can remain in the fluid milk from dairy animals or meat after slaughter, thus exposing consumers to synthetic hormones or steroids.^{vii} Livestock raised in confined and crowded facilities increase the spread of zoonotic diseases as pathogens are more likely to spread between animals and humans under those conditions, and perpetuate antibiotic resistance; 80% of all antibiotics sold in the United States are used in animal agriculture.^{viii, ix, x}

Beyond animal welfare and human health concerns, industrial livestock production poses significant environmental threats. It is responsible for approximately 12-18% of global greenhouse gas (GHG) emissions, as a source of not only CO₂, but also methane (CH₄) and nitrous oxide (N₂O).^{xi, xii} Most emissions come from a combination of animal waste, conversion of ecosystems (grasslands and forests) to intensive livestock operations, and enteric fermentation.^{xiii} Water and air pollution from large-scale, industrial operations can be significant.^{xiv} Compounding this issue, disparate impacts of this pollution are often experienced by underserved and marginalized communities.^{xv, xvi}

Large, industrialized dairies focus on maximizing production and profits, often at the expense of the health and wellbeing of animals and quality of the products they sell. In these production systems, dairy cows may be housed in crowded barns or individual stalls, both of which restrict access to outdoors and limit their movement and socialization. Cows are often given hormones (e.g., rBGH) to increase milk production, however, the health consequences of such drugs include increased risk of lameness, udder infections, and reproductive problems.^{xvii} Due to the high rates of udder infections, cows treated with hormones also receive higher quantities of antibiotics. There is concern that animals given hormones and antibiotics carry those substances to the milk, where they may have an impact on human health.^{xviii} Because dairy production also relies on female cows producing milk post calving, there can be concerns surrounding methods of calf-mother separation, replacement nutrients provided to the calves if not provided milk or allowed to nurse, and male calf treatment.^{xix, xx}

While there are many concerns associated with the industrialized approach to dairy production, there are alternative production methods that can greatly reduce or eliminate many associated harms and negative impacts. For example, livestock that is certified organic must meet specific United States Department of Agriculture (USDA) regulations that are backed by a federal law known as the Organic Foods Production Act (OFPA). Under this certification program, meat, pork, poultry, and dairy producers must meet organic production requirements that often result in improved animal welfare, enhanced biodiversity, lower greenhouse gas

emissions, and healthier soils that sequester more carbon.^{xxi} Organic certification also prohibits added growth hormones, antibiotics, animal byproducts in feed, and genetically engineered feed ingredients. Under organic regulations, ruminants must have free access to pasture during the grazing season, or at minimum 120 days per year.^{xxii,xxiii}

Often building on the foundational standards of organic but many times lacking verification or a consistent definition, regenerative agriculture also takes a more holistic approach to livestock production, crop cultivation, and land management.^{xxiv} For most regenerative practitioners, animal health and wellbeing are key components of this holistic approach. Outdoor access is foundational for raising livestock and farmers are encouraged to incorporate animals into native ecosystems through managed or rotational grazing of ruminants (e.g., cows) on grasslands or incorporating animals (of any species) into forests or tree crops, a practice known as agroforestry or silvopasture.^{xxv,xxvi,xxvii}

Whether organic or verified regenerative, these practices offer alternative frameworks to conventional agriculture, with less impact on the climate and better animal welfare outcomes.^{xxviii,xxix,xxx}

As a retailer that prioritizes the welfare of people, animals, and the planet, PCC sets high standards for the milk products sold in our stores, so that we can provide the most humane and sustainable choices for omnivorous shoppers.

Scope

This is a product-specific standard and applies to all fresh cow and goat milk, plain and flavored, sold in PCC stores.

Standard

1. Products

- 1.1. All fresh milk products sold at PCC under the scope of this standard must come from animals raised in accordance with the animal welfare requirements set forth in section 2.
 - 1.1.1. PCC encourages producers not within the scope of this standard to source milk raised from animals in compliance with the criteria outlined below in section 2.
- 1.2. Vendors within the scope of this standard must adhere to the GE Ingredients and Labeling Standard, specifically the section titled “Animal Products.”
- 1.3. PCC does not accept milk from cloned animals or their offspring.
- 1.4. PCC does not sell unpasteurized, raw milk.
- 1.5. Chocolate or flavored milks must also comply with the food ingredient standard.
- 1.6. PCC encourages vendors to pursue third-party certification programs to verify and add credibility to sustainability and animal welfare claims (e.g., organic, non-GMO, and Animal Welfare Approved).
- 1.7. PCC encourages vendors to be honest and transparent regarding the origin of their stock and whether they maintain a closed herd.

2. Animal Welfare

- 2.1. Habitat & Housing
 - 2.1.1. Animals must not be continuously confined to individual crates or stalls that severely limit their movement unless health circumstances require temporary limitation of full mobility.
 - 2.1.2. Animal density for indoor housing and outside spaces must allow for expression of natural behaviors, both physical and social.
 - 2.1.3. Animals must have access to outdoors and pasture, or land with vegetation for grazing.

- 2.1.4. Shelters and housing must be well ventilated and allow fresh air to enter.
- 2.1.5. Manure should be removed from housing or shelters on a regular basis.
- 2.1.6. Animals must have access to housing or shelter that protects them from weather or climate extremes.
- 2.1.7. Predator protection measures should be in place, utilizing non-lethal predator control methods first.

2.2. Nutrition

- 2.2.1. Feed must not contain animal byproducts.
- 2.2.2. Feed must be distributed in a method that minimizes competition among animals.
- 2.2.3. Animals must have unrestricted access to clean, fresh water at all times.

2.3. Health & Handling

- 2.3.1. No sub-therapeutic or non-therapeutic antibiotics, hormones (e.g., rBGH), or growth promoters may be used in any form to control or prevent disease, or to promote growth or feed efficiency.
- 2.3.2. Animals must receive preventative health care for disease and/or parasites.
- 2.3.3. Ill animals must be provided immediate and necessary care.
- 2.3.4. Electric prods must not be used in routine handling and used only as a last resort in emergency situations where the safety of animals or workers is at risk.
- 2.3.5. The process of milking or moving animals into milking facilities must be done in a manner that causes as little stress as possible.
- 2.3.6. Any physical alterations to animals must be done by a veterinarian or trained professional and employ pain management during and after procedures to minimize stress and pain to animals.
 - 2.3.6.1. Dehorning/disbudding, if necessary, is permitted for goats and cows.
 - 2.3.6.2. PCC recommends employing livestock management practices that eliminate or reduce the need for any physical alterations done to curtail injuries among animals, such as maintaining adequate stocking densities to minimize stress and aggression in animals.

2.4. Offspring & Weaning

- 2.4.1. Separation of young from the cow or doe/nanny goat must be done in such a way that causes as little stress as possible.
- 2.4.2. Calves or kids should be grouped and housed following best practices that ensure animals are kept healthy and properly socialized.
- 2.4.3. Calves or kids must not be continuously confined to individual crates or stalls that severely limit their movement unless health circumstances require temporary limitation of full mobility.
- 2.4.4. Young animals should have access to outdoors and be permitted to graze in season.
- 2.4.5. Calves and kids may be raised with the full herd following a natural weaning schedule.
- 2.4.6. Calves and kids must not be fed milk replacer containing antibiotics, growth promoters, or animal byproducts.

2.5. Transportation

- 2.5.1. Transportation times (including loading time) should not exceed 10 hours.

2.6. Mortality

- 2.6.1. Animals must be rendered unconscious before slaughter in commercial facilities, except where smallholder farms utilize on-farm, humane slaughter practices.
- 2.6.2. Slaughter facilities must be regularly audited by a third party.

Standard-Specific Glossary

Agroforestry is the intentional integration of trees or shrubs with crop and animal production systems to create environmental, economic, and social benefits.

Animal byproducts include cooking oil from restaurants and food processors, blood and blood products, pork and horse protein, feather meal, manure, and hatchery waste.

Concentrated Animal Feeding Operations (CAFO) can be defined and understood in multiple ways. The regulatory definition from the Environmental Protection Agency (EPA) simply identifies CAFOs as large-scale meat, dairy, and egg facilities (Animal Feeding Operations (AFO)) that raise animals in confinement for at least 45 days per year. However, any AFO that discharges manure or wastewater into a natural or human-made ditch or waterway can be classified as a CAFO, regardless of its size. These facilities are regulated under the Clean Water Act.^{xxx} Regulatory definitions aside, CAFOs are commonly understood as factory farms that house large numbers of animals in inhumane conditions, relying heavily on antibiotics and growth hormones, and are major sources of air and water pollution. They contribute most significantly to climate change compared to other animal production systems, such as pasture raised animals or regenerative farms that incorporate livestock into land management.^{xxxii}

Does are female goats.

Enteric fermentation is the digestive process in ruminant animals, including cattle, sheep, goats, and bison, which produces methane. The gas is a byproduct of microorganisms breaking down plant material during digestion.

Genetically Engineered (GE)/Genetically Modified Organism (GMO): A living organism whose genetic material (DNA) has been artificially manipulated in a laboratory through genetic engineering. This process creates unique combinations of genes that do not occur in nature or through traditional breeding methods, involving plant, animal, bacterial, or viral genes. Variability in the definition has created challenges in achieving transparency and consensus around GMO labeling.

Greenhouse gases (GHG) are those that trap heat in the atmosphere and contribute to climate change. Carbon dioxide (CO₂) is one of the most well-known GHGs, as its emissions are the largest in quantity and it remains in the atmosphere for a long time. Other GHGs include methane (CH₄), nitrous oxide (N₂O), and fluorinated gases (most commonly associated with refrigerants).

Kids are young goats.

[National Organic Program](#) (NOP) was established in 2000 under the Organic Foods Production Act of 1990 to regulate the production, processing, and sale of certified organic foods in the United States. The NOP resides within the USDA and manages organic certification standards, enforcement, and accreditation of independent certifying bodies. The National Organic Standards Board (NOSB), a federal advisory committee, provides recommendations and guidance to the NOP on developing new rules and regulations related to organic certification.

Organic refers to the practices associated with organic food production and processing that prohibit the use of most synthetic inputs and pesticides, along with requiring other environmental and animal-friendly agricultural and food handling practices. Established by the Organic Foods Production Act (a federal law), the **[National Organic Program](#) (NOP)** within the US Department of Agriculture (USDA) manages the organic certification standards, enforcement, and accreditation of independent certifying bodies. Many other countries also have organic certification programs.

Pasteurized milk is milk that has undergone a physical process that quickly heats and cools it to kill off bacteria that can cause illness, including *salmonella*, *listeria*, and *E. Coli*.

“Pasture raised” does not have a standardized definition but most definitions require that animals spend significant portions of their lives on vegetated, open pasture where they can graze freely. Most of the animals’ diet comes from pastureland but are often given supplemental feed to ensure all of their nutritional needs are

met. Some producers limit the definition to “seasonal pasture raised,” depending on climate conditions and the needs of the animals.

Raw milk is milk from any animal that has not been pasteurized to kill bacteria like *E. coli*, *listeria*, and *salmonella*. Even certified organic milk can still contain illness-causing germs and pathogens.

rBGH (recombinant bovine growth hormone), also known as rBST (recombinant bovine somatotropin) is a synthetic growth hormone that increases milk production in dairy cows. Cows treated with rBGH have a number of potential health issues, including lameness, udder infections, and reproductive problems. While evidence isn’t fully conclusive, some research indicates that rBGH could contribute to higher rates of breast cancer among humans. In response to [public health campaigns](#) starting in the early 2000’s, more food manufacturing companies have been reducing or eliminating rBGH milk from their products.

Regenerative agriculture is a holistic land management and farming methodology that focuses on increasing and enhancing soil organic matter to improve nutrient content, water retention, and carbon sequestration. Unless certified by a third party with established regenerative standards, regenerative does not have an agreed upon definition or guarantee associated with the term’s use.

Silvopasture is a type of agroforestry that combines trees with foraging land for livestock production.

Smallholder Farms are defined as independently owned farms whose principal operator(s) owns the farm business and demonstrates a strong commitment to sustainable farm practices and animal welfare. The principal operator is the person who is responsible for the on-site, day-to-day decisions of the farm or ranch business. Any slaughter of animals on smallholder farms must take place on farm property with attention to humane slaughter practices where reasonable given farm size and scale. Gross annual sales of a smallholder farm must fall under \$250,000.

Sub-therapeutic/non-therapeutic refers to a dose or concentration of a drug that is lower than usually prescribed to treat a disease effectively. For example, it can be common practice to add subtherapeutic doses of antibiotics to livestock feed to improve productivity.

Zoonotic diseases are infectious diseases that can be passed between animals and humans through direct contact or contact with contaminated vectors such as food or water. Common zoonotic diseases include the plague, salmonella, West Nile virus, rabies, and zoonotic influenza. Confinement of animals, or even people, increases the risk of spreading infectious diseases and there is growing concern that CAFOs are hotbeds for the spread of zoonotic diseases because of the close quarters, weakened immune systems of animals, excessive use of antibiotics, and improper waste management.^{xxxiii}

ⁱ EPA, “Sources of Greenhouse Gas Emissions: Agriculture Sector Emissions,” Overviews and Factsheets, United States Environmental Protection Agency, 2019, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>.

ⁱⁱ Neus González et al., “Meat Consumption: Which Are the Current Global Risks? A Review of Recent (2010–2020) Evidences,” *Food Research International* (Ottawa, Ont.) 137 (November 2020): 109341, <https://doi.org/10.1016/j.foodres.2020.109341>.

ⁱⁱⁱ Courtney Lindwall, “Industrial Agricultural Pollution 101,” *NRDC* (blog), July 31, 2019, <https://www.nrdc.org/stories/industrial-agricultural-pollution-101>.

^{iv} “The Welfare of Intensively Confined Animals in Battery Cages, Gestation Crates, and Veal Crates” (The Humane Society of the United States, July 2012), <https://www.humanesociety.org/sites/default/files/docs/hsus-report-animal-welfare-of-intensively-confined-animals.pdf>.

^v “Animal Welfare,” *A Greener World* (blog), accessed July 12, 2021, <https://agreenerworld.org/challenges-and-opportunities/animal-welfare/>.

^{vi} The Humane Society of the United States, “An HSUS Report: Welfare Issues with the Use of Hormones and Antibiotics in Animal Agriculture,” January 2016, <https://www.humanesociety.org/sites/default/files/docs/hsus-report-issues-with-hormones-welfare.pdf>.

- vii Senthil Venkatraman et al., “Adverse Effects on Consumer’s Health Caused by Hormones Administered in Cattle,” *International Food Research Journal* 25 (February 1, 2018): 1–10.
<https://www.proquest.com/openview/b2eb062a6ce426c9fb8e6e53a84e316a/1?pq-origsite=gscholar&cbl=816390>.
- viii Bryony A. Jones et al., “Zoonosis Emergence Linked to Agricultural Intensification and Environmental Change,” *Proceedings of the National Academy of Sciences of the United States of America* 110, no. 21 (May 21, 2013): 8399–8404,
<https://doi.org/10.1073/pnas.1208059110>.
- ix Jeff Moyer et al., “The Power of the Plate: The Case for Regenerative Organic Agriculture in Improving Human Health,” White Paper (Rodale Institute, 2020), <https://rodaleinstitute.org/wp-content/uploads/Rodale-Institute-The-Power-of-the-Plate-The-Case-for-Regenerative-Organic-Agriculture-in-Improving-Human-Health.pdf>.
- x “10 Things You Should Know about Industrial Farming,” United Nations Environmental Program, July 20, 2020,
<http://www.unep.org/news-and-stories/story/10-things-you-should-know-about-industrial-farming>.
- xi Neus González et al., “Meat Consumption: Which Are the Current Global Risks? A Review of Recent (2010–2020) Evidences,” *Food Research International (Ottawa, Ont.)* 137 (November 2020): 109341,
<https://doi.org/10.1016/j.foodres.2020.109341>.
- xii P.R. Shukla et al., “Climate Change and Land: An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems” (Intergovernmental Panel on Climate Change, 2019), <https://www.ipcc.ch/site/assets/uploads/2019/11/SRCCL-Full-Report-Compiled-191128.pdf>.
- xiii Giampiero Grossi et al., “Livestock and Climate Change: Impact of Livestock on Climate and Mitigation Strategies,” *Animal Frontiers* 9, no. 1 (January 3, 2019): 69–76, <https://doi.org/10.1093/af/vfy034>.
- xiv JoAnn Burkholder et al., “Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality,” *Environmental Health Perspectives* 115, no. 2 (February 1, 2007): 308–12, <https://doi.org/10.1289/ehp.8839>.
- xv Wendee Nicole, “CAFOs and Environmental Justice: The Case of North Carolina,” *Environmental Health Perspectives* 121, no. 6 (June 2013): a182–89, <https://doi.org/10.1289/ehp.121-a182>.
- xvi Michael Greger and Gowri Koneswaran, “The Public Health Impacts of Concentrated Animal Feeding Operations on Local Communities,” *Family & Community Health* 33, no. 1 (January 2010): 11–20,
<https://doi.org/10.1097/FCH.0b013e3181c4e22a>.
- xvii The Humane Society of the United States, “An HSUS Report: Welfare Issues with the Use of Hormones and Antibiotics in Animal Agriculture,” January 2016, <https://www.humanesociety.org/sites/default/files/docs/hsus-report-issues-with-hormones-welfare.pdf>.
- xviii Jean A. Welsh et al., “Production-Related Contaminants (Pesticides, Antibiotics and Hormones) in Organic and Conventionally Produced Milk Samples Sold in the USA,” *Public Health Nutrition* 22, no. 16 (November 2019): 2972–80,
<https://doi.org/10.1017/S136898001900106X>.
- xix Tom Levitt, “Dairy’s ‘Dirty Secret’: It’s Still Cheaper to Kill Male Calves than to Rear Them,” *The Guardian*, March 26, 2018, sec. Environment, <https://www.theguardian.com/environment/2018/mar/26/dairy-dirty-secret-its-still-cheaper-to-kill-male-calves-than-to-rear-them>.
- xx Andrew Jacobs, “Is Dairy Farming Cruel to Cows?,” *The New York Times*, December 29, 2020, sec. Science,
<https://www.nytimes.com/2020/12/29/science/dairy-farming-cows-milk.html>.
- xxi Ben Knuth et al., “Advancing Organic to Mitigate Climate Change,” White Paper (Washington, D.C.: Organic Trade Association, 2020),
https://ota.com/sites/default/files/indexed_files/OrganicTradeAssociation_ClimateChange_WhitePaper_PlanetOrganic.pdf.
- xxii Agricultural Marketing Service, “Organic Livestock Requirements” (USDA National Organic Program, July 2013),
<https://www.ams.usda.gov/sites/default/files/media/Organic%20Livestock%20Requirements.pdf>.
- xxiii Agricultural Marketing Service, “Organic,” United States Department of Agriculture, accessed July 7, 2021,
<https://www.ams.usda.gov/grades-standards/organic-standards#Livestock>.
- xxiv A Greener World, “What Is ‘Regenerative’? 9 Reasons You Should Care,” *A Greener World* (blog), November 13, 2020,
<https://agreenerworld.org/a-greener-world/what-is-regenerative-9-reasons-you-should-care/>.
- xxv Shibu Jose and Jeanne Dollinger, “Silvopasture: A Sustainable Livestock Production System,” *Agroforestry Systems* 93, no. 1 (February 1, 2019): 1–9, <https://doi.org/10.1007/s10457-019-00366-8>.
- xxvi Paul Hawken, ed., *Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming* (Penguin, 2017).
- xxvii “Literature Review: Crop & Livestock Integration,” *Rodale Institute* (blog), August 6, 2019,
<https://rodaleinstitute.org/science/articles/literature-review-crop-livestock-integration/>.
- xxviii Jeff Moyer et al., “The Power of the Plate: The Case for Regenerative Organic Agriculture in Improving Human Health,” White Paper (Rodale Institute, 2020), <https://rodaleinstitute.org/wp-content/uploads/Rodale-Institute-The-Power-of-the-Plate-The-Case-for-Regenerative-Organic-Agriculture-in-Improving-Human-Health.pdf>.

-
- ^{xxix} Jason E. Rowntree et al., “Ecosystem Impacts and Productive Capacity of a Multi-Species Pastured Livestock System,” *Frontiers in Sustainable Food Systems* (2020), <https://doi.org/10.3389/fsufs.2020.544984>.
- ^{xxx} Hannah Gosnell, Susan Charnley, and Paige Stanley, “Climate Change Mitigation as a Co-Benefit of Regenerative Ranching: Insights from Australia and the United States,” *Interface Focus* 10, no. 5 (October 6, 2020): 20200027, <https://doi.org/10.1098/rsfs.2020.0027>.
- ^{xxxi} Natural Resources Conservation Service, “Animal Feeding Operations,” United States Department of Agriculture, accessed July 2, 2021, <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/livestock/afo/>.
- ^{xxxii} “Why Are CAFOs Bad?,” Sierra Club, February 24, 2015, <https://www.sierraclub.org/michigan/why-are-cafos-bad>.
- ^{xxxiii} Lisa Held, “Industrial Meat 101: Could Large Livestock Operations Cause the Next Pandemic?,” *Civil Eats*, May 29, 2020, <https://civileats.com/2020/05/29/industrial-meat-101-could-large-livestock-operations-cause-the-next-pandemic/>.