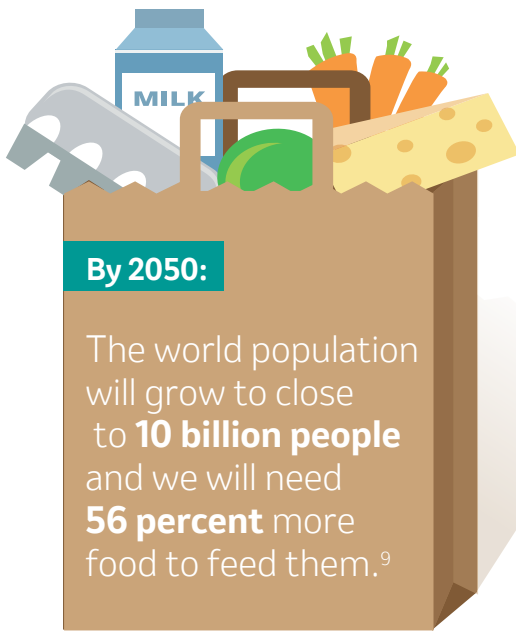


TALKING TO CONSUMERS

about sustainability

Merck Animal Health is committed to improving the health and well-being of animals. Our three pillars: Leading with Prevention, Innovating with Science and Advancing Animal Well-Being, are the underpinning of our portfolio of products and services that help deliver a safe, affordable and sustainable food supply to meet the world's growing demand for animal protein. Our social responsibilities extend beyond our primary business goals and include support of sustainable farming practices.



By 2050:

The world population will grow to close to **10 billion people** and we will need **56 percent** more food to feed them.⁹

Agriculture plays an important role in meeting the need for a sustainable food supply.

Remember:

- **Growing food has an environmental impact.** Resources are used to grow the diverse amount of food choices we all enjoy today.²

Careful stewardship of natural resources creates a healthy environment

Animal agriculture is making significant progress with sustainability measures to improve land, water and energy use while producing healthy food with these farm management practices:⁶

Land

- Soil testing
- Crop rotation
- Reduced tillage

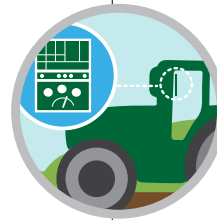
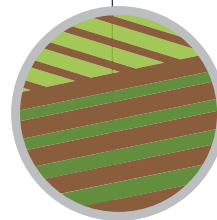
Water

- Recycling
- Precision irrigation
- Manure management
- Cover crops and buffer strips

Energy

- Improved equipment technology
- Modern, efficient facilities
- Alternate energy sources

- **Transitioning to sustainable agriculture is a process.** Everyone in the food system has a role, and the key to moving forward is the willingness of everyone to take the next step toward sustainable food production.³
- **Animal agriculture has made significant progress.** Livestock and crop farmers have supported efforts to quantify environmental impacts of raising food animals.^{4,5}
- **Continuous improvement is happening every day.** U.S. farmers and ranchers use data and technology to become more efficient, nimble and more equipped to further protect the planet's resources.⁶



¹Michigan State University Extension. Feeding the world in 2050 and beyond - Part 1: Productivity challenges. <https://www.canr.msu.edu/news/feeding-the-world-in-2050-and-beyond-part-1#:~:text=The%20general%20co>. Accessed January 1, 2021.

²National Center for Biotechnology Information. Critical Role of Animal Science Research in Food Security and Sustainability. <https://www.ncbi.nlm.nih.gov/books/NBK285726/>. Accessed January 1, 2021.

³Sustainable Agriculture Research and Education Program. UC Davis Agricultural Sustainability Institute. <https://books.nap.edu/read/19000/chapter/1>. Accessed January 1, 2021.

⁴Cattlemen's Beef Board and National Cattlemen's Beef Association. NCBA Sustainability Executive Summary. 2019. <https://www.beefboard.org/wp-content/uploads/2019/05/SustainabilityExecutiveSummary.pdf>. Accessed January 1, 2021.

⁵National Pork Board. Commit and Improve: Pig Farmers' Approach to Sustainability. <https://www.porkcdh.com/sites/all/files/documents/WeCare/npb-sustainability-report-full.pdf>. Accessed January 1, 2021.

⁶U.S. Farmers & Ranchers Alliance. Agriculture is America Sustainability Report. 2017. <https://soygrowers.com/wp-content/uploads/2018/05/USFRA-Ag-sustainability-report-2017.pdf>. Accessed January 1, 2021.

⁷U.S. Dairy. Dairy Environmental Sustainability. <https://www.usdairy.com/sustainability/environmental-sustainability>. Accessed January 2, 2021.

⁸Genetic Literacy Project. Are organic or non-GMO farming more sustainable than farming using GMOs? <https://geneticliteracyproject.org/gmo-faq/are-organic-and-non-gmo-farming-more-sustainable-than-farming-using-gmos/>. Accessed January 1, 2021.

⁹World Resources Institute. How to Sustainably Feed 10 billion People by 2050, in 21 charts. December 5, 2018. <https://www.wri.org/blog/2018/12/how-sustainably-feed-10-billion-people-2050-21-charts>. Accessed January 1, 2021.

TALKING TO CONSUMERS about sustainability

We understand consumers have questions about the sustainability of animal agriculture and its impact on the environment, and we want to help answer them. It is important to help consumers understand the progress we are making in animal agriculture to preserve and improve our land, water and air while keeping food affordable for all of us.

CONSUMER: What does sustainably raised mean?

I appreciate the question because sustainability means different things to different people. Agriculture has worked to quantify its environmental impact and approaches sustainability as a preservation of resources including, land, water, air and habitat, while adopting practices to improve soil health, clean water and reduce emissions.⁶ In animal agriculture, the well-being of the animal comes first, and we are making progress to raise meat and milk for consumer dinner tables sustainably. For example, beef cattle graze on land that can't be cultivated or on corn fields after harvest to eat what's left of the corn plant. The environmental impact of producing a gallon of milk requires 30% less water, 21% less land and a 19% smaller carbon footprint than it did in 2007.⁶

CONSUMER: How does raising animals impact the environment?

I think about our environment and how it needs to remain healthy for future generations, too. We both know it takes resources—land, water and energy—to raise crops and animals. In animal agriculture, our focus is on conserving natural resources while producing more food overall. Livestock farmers use tools like environmental footprint calculators and even create energy from a methane digester that converts manure into electricity. Other examples of sustainable farm practices include improved animal housing that uses less electricity; advances in technology that allow more animal feed to be grown on less land and putting manure to good use as a natural fertilizer.

CONSUMER: How much water is really used to raise animals?

Just like humans, animals need water. A reliable water supply is critical to animal agriculture, so water use and conservation is a top priority for farmers. Overall, less water is being used to grow and raise our food. Over the past 55 years, U.S. producers have reduced their environmental footprint by using: 76% less land, 25% less water, 7% less energy and 8% lower carbon emissions to produce one pound of pork.⁵ Farmers also employ conservation methods such as recycling water on dairy farms after cleaning equipment, growing cover crops that keep water and soil in fields and precision irrigation methods.

CONSUMER: I heard that animal agriculture contributes the most to GHG emissions. Is that true?

That's a great question and a common misconception. In fact, the largest source of GHG emissions is from burning fossil fuels for the human use of electricity, heat and transportation.⁷ Regardless, agriculture is doing more to use less energy, including technology for tractors and farm equipment that require fewer passes on a field and using alternative energy biofuels, ethanol and biodiesel that burn cleaner.

CONSUMER: Isn't organic food more sustainable?

When it comes to my family, like you, I want to be sure the food we eat is safe and healthy. Farms of all shapes and sizes, including organic and conventional and everything in between, all use a variety of sustainability practices that keep soil, water and air clean and healthy. Both conventional and organic farming use pesticides to protect crops from bugs and weeds⁸ along with crop scouting and drones to monitor fields and apply chemicals only where needed. Farmers are committed to sustainability and overall food safety, which is great for all of us.

CONSUMER: Who oversees/regulates if farmers are being sustainable?

I'd want to feel that there is oversight built into the food system, too. The EPA is primarily responsible for monitoring environmental practices on farms and compliance with regulations such as the Clean Water and Air Acts that protect our water and air quality. Water is kept clean on farms from buffer strips between fields and waterways, no-till cultivation that leaves plant residue from the previous crop on the fields to reduce erosion and improved GPS technology on equipment that requires fewer trips across a field.

CONSUMER: This has all been very helpful. Thanks for your time.

My pleasure. We understand that transparency in food production is important to consumers like you, and I enjoy these conversations and the open dialogue. We all want to make choices that allow us to feel good about our food and the impact raising it has on our world.



The Science of Healthier Animals®