SOYBEANS AND SOYBEAN OIL SUSTAINABILITY

U.S. Soybean Oil Compared to Other Plant Proteins

Global demand for soybean oil is growing, and with businesses, states and countries adopting sustainable policies and committing to building a better environment, that demand is only going to continue.

Global Demand for Sustainable Soybean Oil

Consumers increasingly expect the products they buy to come from sustainable sources and soybean customers are passing those demands on to producers.

This is where U.S. Soy continues to meet the expectations of its customers, with **U.S. soybeans having the lowest carbon footprint** compared with other types of proteins.

U.S. Soy farmers are industry leaders in implementing innovative solutions that ensure they can produce more with fewer resources. Their farming practices are helping to reduce the carbon footprint of their crops as part of an ongoing commitment to sustainability. This allows our customers to produce food, feed, energy and other products that support a healthy society while also preserving the environment for future generations.

Between 1997 and 2017, U.S. **forestland increased by 742 thousand hectares, while cropland decreased by 3.6 million hectares**.

Since 1980, U.S. Soy Farmers Have Made Sustainability Improvements

↑48%	↑46%	↑130%	↑43%	↑34%
land use efficiency improvement per bushel	energy use efficiency improvement per bushel	production increase	greenhouse gas emissions efficiency per bushel	soil erosion improvement per acre

U.S. soybeans offer a sustainable and a more environmentally friendly solution to growing demand, particularly when compared to other plant-based proteins, including peas from Canada, Russia and France, chickpeas from Australia and India, and broad beans from Australia and France.

The U.S. Soybean Export Council (USSEC), with support from the soy checkoff, partnered with Mérieux NutriSciences | Blonk, a leading international expert in food system sustainability, to use the Agri-footprint™ database to evaluate the carbon footprint of various plant proteins sourced from different countries. The Agri-footprint™ database is based on the Life Cycle Assessment (LCA) methodology, which considers the Land Use Change (LUC) impact according to the Product Environmental Footprint (PEF) standard used by the European Commission to calculate the environmental footprint of a specific product. The Agri-footprint™ database is used to calculate the carbon footprint for a wide range of country-crop combinations.

Figure 1 below shows the carbon footprint of U.S. soybeans is significantly lower than other proteins such as peas, chickpeas and broad beans from other origins. In fact, U.S. soybeans are responsible for just 0.39 kilograms of CO_2 per kilogram of product. This compares to peas from Canada (1.39 kilograms), Russia (1.23 kilograms) and France (at 0.36 kilograms), chickpeas from Australia (1.18 kilograms) and India (1.23 kilograms), and broad beans from Australia (0.81 kilograms) and France (at 0.98 kilograms).

With U.S. soybean farmers adopting and implementing innovative practices and firmly committed to producing crops sustainably, it's clear that U.S. soybeans have an advantage when compared to products from other origins. U.S. soybean farmers are making sure that the carbon footprint of U.S. Soy not only remains low, but that we also continue to develop practices that further minimize our emissions today and in the future.

CARBON FOOTPRINT OF U.S. SOYBEANS VS. OTHER PLANT PROTEINS *(Including Land Use Change and Peat)**

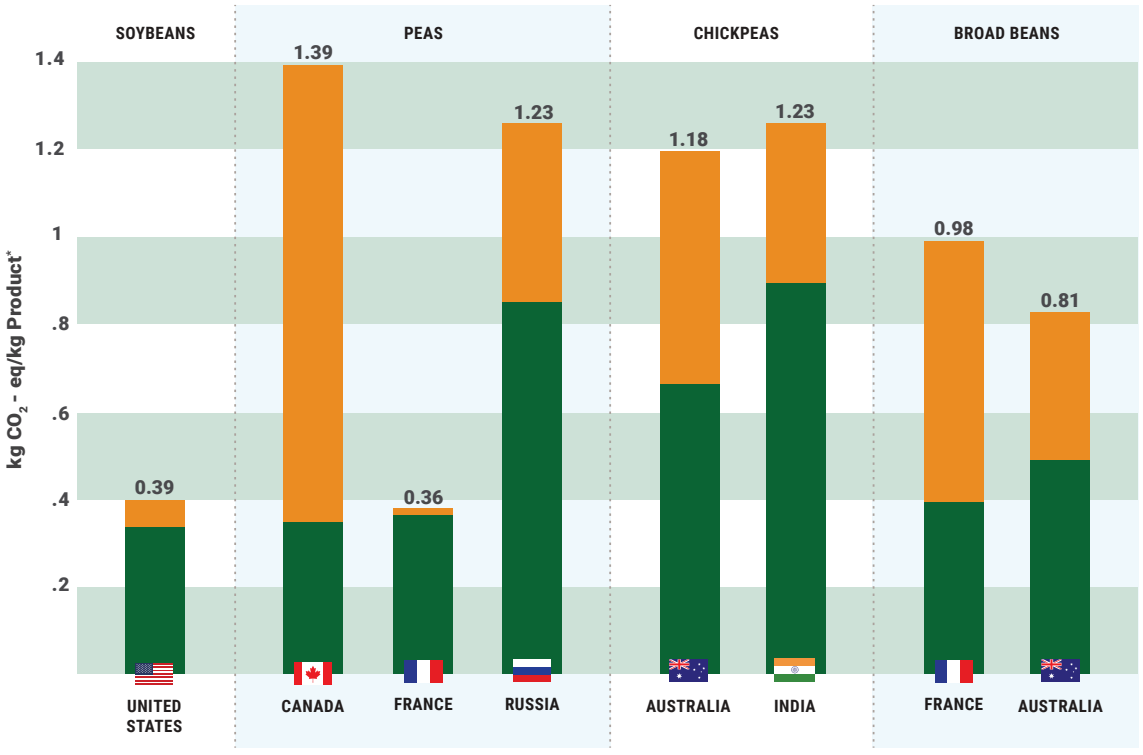

Figure 1.
Illustrates the carbon footprint of U.S. soybeans vs. other plant proteins.

Land Use Change + Peat

Cultivation

Mérieux NutriSciences | Blonk

Source: Mérieux NutriSciences | Blonk, Agri-footprint™

*Results based on default emission modeling, including land use change emissions, according to the rules of the PEFCR-Feed guidance document (European Commission, 2018) as implemented in the Agri-footprint™ 6.3 database. Input data rely on country average FAO statistics and other secondary sources. Supplier-specific information would improve data quality and may provide differing results. Comparisons have not been reviewed in the context of ISO 14040/14044 compliance.