

Minus 82%: Europe Soya certified soybean meal avoids CO₂ emissions

The environmental impact of soybean meal is largely determined by the soybean cultivation stage. A recent study by the Research Institute of Organic Agriculture (FiBL) Austria demonstrates this for Europe Soya certified soybean meal processed at AdamPolSoya (ATK Group) in Ukraine. By using only Europe Soya certified soybeans, AdamPolSoya avoids 82% of CO₂ emissions compared to average soybean meal available at the European market.

Background

In Europe, food consumption accounts for one quarter of individual greenhouse gas emissions per year^[1]. Food choices play a crucial role in consumers' personal carbon footprint. In the production of animal-based food, relevant amounts of greenhouse gas emissions already emerge during animal feed production. Soybean meal is one of the most widely used protein sources in animal feed globally.



Soybean meal by AdamPolSoya is produced from Europe Soya certified soybeans from Ukraine.
Photo: Shutterstock

Traceable origin of soybeans is relevant

About 40% of the soya imported to the European Union originate from Brazil^[2]. These imports are mainly used as high-protein feed in livestock production. Soya feed from the Amazon region or the Cerrado is associated with high CO₂ emissions due to deforestation and land conversion.

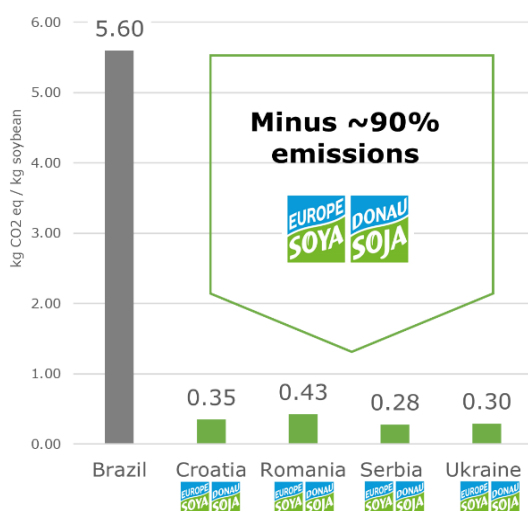


Figure 1: Comparison of global warming potential of 1 kg of soya beans from Brazilian non-certified production incl. LUC (Agri-footprint 5.0) with 1 kg Donau Soja / Europe Soya certified soybeans in 4 European countries (Blonk Consultants, 2022).

This results in a CO₂ footprint for Brazilian soya beans being about ten times higher than for Donau Soja / Europe Soya certified soya beans (see figure 1).

Globally, the change in land use - for example from grassland or forest to agricultural land - accounts for large amounts of greenhouse gas emissions^[3].

Between 2005-2017, the EU accumulated 3,5 Mio hectares of deforestation in their imported products. Soya is one of the major contributors, accounting for 31% of EU imported deforestation^[4].

Results of the study: Carbon footprint in soybean processing

The study by FiBL Austria shows how the exclusive use of Europe Soya certified soybeans has a positive impact on the carbon footprint of certified soybean meal processed by AdamPolSoya.

The soybean meal produced from Europe Soya certified Ukrainian soybeans causes 0.36 kg CO₂ per kg product. In comparison to that, average soybean meal produced in Europe causes 1.99 kg CO₂ per kg of soybean meal. The latter is produced from an average global soybean import mix and therefore associated with emissions from land use change imported to Europe with soybeans from overseas [5]. The reduction corresponds to an avoidance of 82% of emissions of AdamPolSoya soybean meal compared to the average European soybean meal production (see figure 2). Comparing AdamPolSoya soybean meal with European soybean meal produced exclusively from an average European soybean mix the reduction is still up to 56 % (see figure 3)^[6]. Further comparison with soybean meal from Brazil and USA can be seen in table 1.

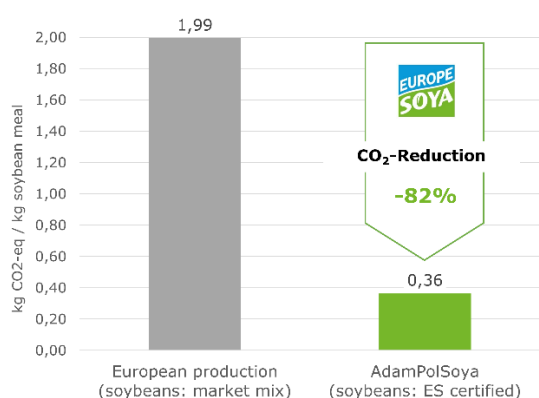


Figure 2: Global warming potential of 1 kg average soybean meal processed in Europe from average soybean import mix (source: GFLI, 2022) vs. 1 kg of soybean meal by AdamPolSoya from Europe Soya certified soybeans from Ukraine (source: FiBL, 2023)

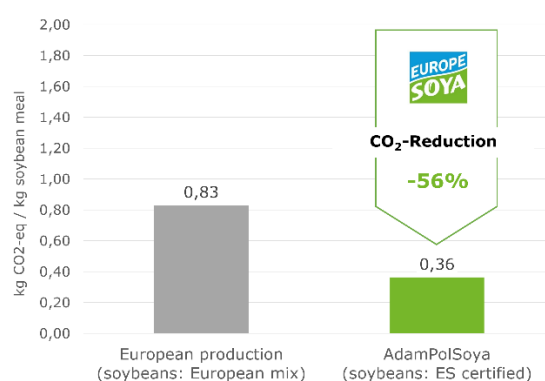


Figure 3: Global warming potential of 1 kg of soybean meal processed in Europe from average European soybean production mix (source: FiBL, 2023) vs. 1 kg of soybean meal by AdamPolSoya from Europe Soya certified soybeans from Ukraine (source: FiBL, 2023)

Table 1: Global warming potential of average soybean meal processed in Brazil, USA and Europe (GFLI, 2022), and Europe Soya certified soybean meal processed by AdamPolSoya in Ukraine (source: FiBL 2023).

Soybean Meal (solvent), at processing	kg CO ₂ -eq / kg soybean meal
Brazil	4.27
USA	0.54
European production (origin of soybeans: global mix)	1.99
European production (origin of soybeans: European mix)	0.83
AdamPolSoya (Europe Soya certified)	0.36

How Donau Soja / Europe Soya certified crushers set an example

The European Union, most notably the European feed industry, is heavily dependent on soya imports. Soya self-sufficiency rate in the EU is just 8%^[7]. In 2020, soya imports amounted to over 34 million tonnes, mainly from overseas. About 11 million hectares are needed to meet this demand - just under one and a half times the area of Austria or three and a half times the size of Zhytomyr region in Ukraine. According to the Sustainable Trade Initiative (IDH), only 25% of the EU's soya demand comes from certified deforestation-free production, as guaranteed by Donau Soja / Europe Soya. [Note: Based on certified deforestation-free volumes (incl. credits by six recognised soya standards)]^[8].

The quality labels Donau Soja / Europe Soya guarantee non-GM, sustainably produced soya of European origin. Donau Soja / Europe Soya certified supply chains protect valuable ecosystems: Soya is only cultivated on land that was dedicated for agricultural use not later than 1 January 2008. AdamPolSoya is Europe Soya certified since 2022 and processes only Europe Soya certified soybeans from Ukraine.



The Donau Soja / Europe Soya quality labels stand for quality- and origin-controlled soya feed

By relying on Donau Soja / Europe Soya AdamPolSoya and other certified crushers actively contribute to the preservation of forests and other valuable ecosystems and thus to climate protection. AdamPolSoya is one of 10 Donau Soja / Europe Soya certified crushers in Europe:



Crushers with ES/DS certification:

01. Sojaprotein/ADM, Becej (RS) – ES
02. BAG, Güssing (AT) – DS
03. Bankom d.o.o., Obrenovac (RS) – DS
04. Cereal Docks, Camisano (IT) – ES+DS
05. Oleificio, San Giorgio (IT) – ES
06. Sodrugestvo, Kaliningrad (RU) – ES
07. Belagrotterminal, Smorgon (BY) – ES
08. Vandamme, Komárom (HU) – ES+DS
09. Nordic Soya Oy, Uusikaupunki (FI) – ES
10. AdamPol Soya, Khmelnytskyi region (UA) – ES
11. ADM, Straubing (DE) – ES
12. Fabrika ulja Dunavka doo, Novi Beograd (RS) – DS



Non-GM Danube Region Standard

13. Bimal, Brcko (BiH)
14. Mistral Komerc, Temerin (RS)

DS = Donau Soja / ES = Europe Soya

About the study

In 2022, Donau Soja commissioned the Research Institute of Organic Agriculture (German: Forschungsinstitut für biologischen Landbau, in short: FiBL) Austria to investigate the effects of using Europe Soya certified soybeans in further production steps. Data on the carbon footprint at the level of soybean production are an essential part of the study and were collected in a previous study in 2021 by Blonk consultants (Netherlands). The primary data collection for soybean processing in Ukraine took place from August 2022 until February 2023.

About AdamPolSoya (ATK Group)

AdamPolSoya is a modern oil extraction plant, processing non-GM soybeans of Ukrainian origin into high-quality Europe Soya certified products, such as: Hipro and Midpro soybean meal, crude degummed soybean oil, pelletized soybean hulls and high-quality food lecithin. Owing to the newest technologies, the plant operates in a closed cycle, ensuring waste-free production and minimal impact on the environment. AdamPolSoya fully tracks the entire chain of product supplies from the field to the consumer and maintains strict quality control at all stages: farm, storage, transportation, and processing, herewith adhering to the principles of food and feed safety.

Website: <http://adampolsoya.com/>

About Donau Soja

Donau Soja is a non-profit, independent and member-based organisation based in Vienna. The vision of Donau Soja is a sustainable, safe and European protein supply. To achieve this, Donau Soja supports, among other things, the sustainable production of soya in Europe and the development of regional value chains. The two labels Donau Soja / Europe Soya stand for non-GM soya products of controlled origin and quality from the Danube region and from Europe. Donau Soja unites over 300 members in 27 countries.

Website: www.donausoja.org

References

- [1] Nemecek, T. & Poore, J. (2019). Reducing food's environmental impacts through producers and consumers. Available at: https://ora.ox.ac.uk/objects/uuid:b0b53649-5e93-4415-bf07-6b0b1227172f/download_file?safe_filename=Reducing_foods_environment_impacts_Science%2B360%2B6392%2B987%2B-%2BAccepted%2BManuscript.pdf&file_format=application%2Fpdf&type_of_work=Journal+article
- [2] based on COMTRADE and EUROSTAT data and converted into soya bean equivalents. Average for 2017-2021.
- [3] United Nations Framework Convention on Climate Change (2020). Land Use, Land-Use Change and Forestry. Available at: www.unfccc.int/topics/land-use/workstreams/land-use--land-use-change-and-forestry-lulucf/land-use--land-use-change-and-forestry
- [4] WWF (2021). Stepping up? The continuing impact of EU consumption on nature worldwide. Available at: https://www.wwf.at/wp-content/cms_documents/stepping-up---the-continuing-impact-of-eu-consumption-on-nature-worldwide_fullreport.pdf
- [5] The global average soybean mix used in European soybean meal production contains up to 70 % soybeans imported from BR and USA. The rest is imported from IT, PY, CA, UA, RO, FR, HU and AT (each between 1-6 %) (GFLI 2.0) Available at: <https://globalfeedlca.org/qfli-database/life-cycle-assessment-download/>
- [6] The European average soybean mix corresponds to the average of the most relevant European soybean growing countries, where available: AT, DE, FR, IT, RO, RU, UA; (Donau Soja, based on Agrifootprint 5.0.) Available at: <https://blonksustainability.nl/tools/agri-footprint>
- [7] Donau Soja calculations based on Eurostat
- [8] The sustainable trade initiative (IDH), 2021. European Soy Monitor. Available at: <https://www.idhsustainabletrade.com/uploaded/2021/06/2019-IDH-European-Soy-Monitor-report.pdf>