

AGRAIN: A FARMLAND-FREE FLOUR



Today, half of the world's habitable land is used for agriculture (1). Agriculture alone is responsible for 80% of global deforestation and 70% of terrestrial biodiversity loss. Over half (52%) of agricultural land is degraded, undermining soil health and the possibility of growing food on the same land in the future (2). With the global population growing and demand for food rising, **the way that we produce food needs to change.**

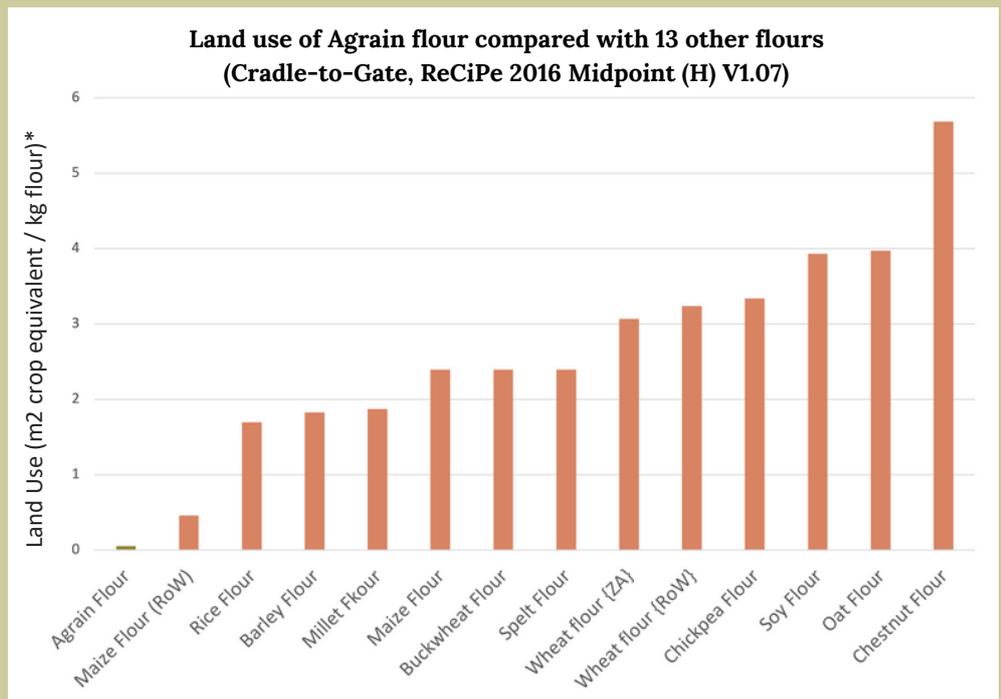
Upcycled Agrain flour is a part of the solution. Instead of growing more flour on new land, Agrain transforms discarded spent grains from beer brewing into a high protein and high fibre flour. In doing so, Agrain keeps these nutritious grains in the food chain, preventing more waste of existing food and the resources that were used to grow it. For every **1kg** of regular flour replaced with upcycled Agrain flour, **2m²** of farmland normally required for flour production are saved since **no new farmland is used.**



AGRAIN FLOUR HAS THE LOWEST LAND USE COMPARED TO OTHER FLOURS

Agrain teamed up with Re-Viu, a third-party environmental evaluation expert, to conduct a Life Cycle Assessment (LCA) of Agrain flour in order to accurately measure the environmental impact of its production (3, 4).

The study compared Agrain's land use to 13 other commercially available flours. These other flours had an average land use of 2.8m² per kilogram. By comparison, Agrain flour has a land use of just 0.05m per kilogram - less than an A4 sheet of paper!



Source: Agrain validated comparative LCA Report. (3)

*m² crop eq' refers to both the amount of change of land cover and the land-use intensification due to crops, annually.



Swapping regular flour for Agrain flour in your recipes is a sure-fire way to reduce your food's environmental footprint.

For example, our [brownie recipe](#) made with Agrain spent grain flour saves up to **98%** of land use compared with using regular flour. With every bite of Agrain brownie, you're helping to protect more land from soil degradation and biodiversity loss.

AGRAIN CAN BE EVEN BETTER

Agrain's environmental impact has the potential to come even closer to zero. For example, in the best-case scenario, Agrain flour can use as little as 0.003m² per kg flour – a staggering 99.8% less compared with alternative flours (3). This can be achieved with just **four improvements**:

- 1 Upcycling spent grain liquid in addition to the separated grains
- 2 Eliminating all flour waste through more efficient processing
- 3 Cutting transport impacts by processing flour and liquid on-site at breweries
- 4 Using 100% renewable energy

REFERENCES

(1) Ritchie, H., Rosado, P. and Roser, M. (2022) "Environmental Impacts of Food Production". Published online at OurWorldInData.org. Retrieved from: '<https://ourworldindata.org/environmental-impacts-of-food>'.

(2) WWF (2021). *Farming with Biodiversity. Towards nature-positive production at scale.* WWF International, Gland, Switzerland. [PDF Link](#).

(3) Feced, M. & Beukel, K. (2023) *Agrain Life Cycle Analysis (LCA).* Circular Food Technology (Agrain).

(4) The report was further validated by independent auditor Bureau Veritas, in compliance with ISO14040 and ISO14044.

NB: Based on 3rd party validated comparative LCA report. Method: Cradle to gate, EF Method 3.0 and ReCiPe 2016 Midpoint (H) V1.07. Claims based on Agrain flour average (4 years). EF Weighted results and environmental trade-off in between categories and specific flours can be found in LCA report (request access via email to contact@agrainproducts.com).