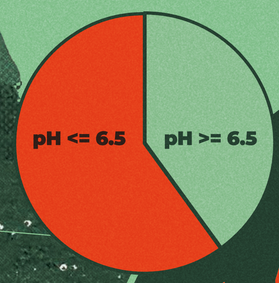
LIMING FOR LIFE



More than 50% of the soils in Europe are acidic

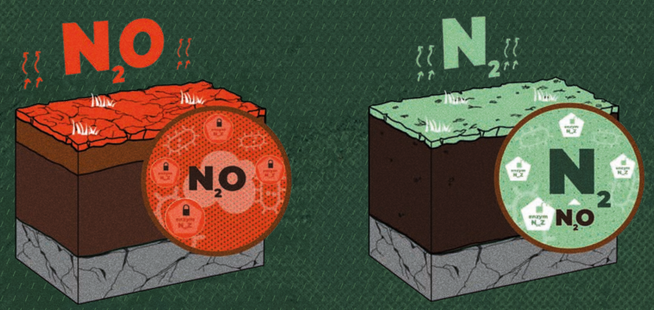
LIMING RESTORES THEM

Stellaria media (Common Chickweed) white flowers
A small, tenacious plant that thrives in nitrogen-rich, well-structured soils. Its presence signals biological fertility and pH balance — a green light from the ground itself.
Bioindicator value: balanced, fertile, well-aerated soil
(Ellenberg N=8, R=6)

Lysimachia arvensis (Scarlet Pimpernel) red flowers
Once called "the poor man's weather glass," this crimson-flowered plant colonizes compacted, acidic, nutrient-depleted soils — a silent alarm where biological life struggles.
Bioindicator value: acidic, poor, disturbed soil
(Ellenberg N=3, R=5)

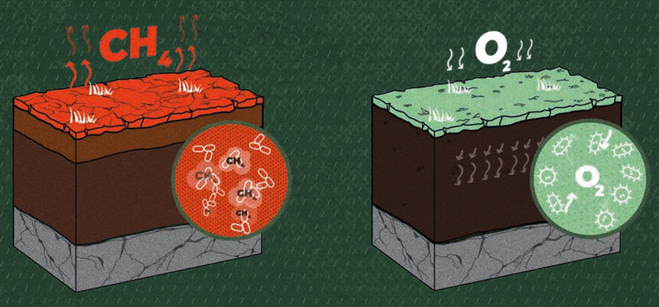
LIMING *for* CLIMATE

Liming improves soil function and nutrient efficiency, helping reduce nitrious oxide emissions from agricultural systems



Liming alters microbial processes and significantly reduces N_2O emissions in many cases partially or fully offsetting the CO_2 released during carbonate dissolution. N_2O warms the planet 273 times faster than CO_2. Studies show liming can cut soil N_2O emissions by 15–45% by lowering nitrogen losses to the atmosphere. N2O soil emissions reductions are already accounted for in the French carbon farming methodology "Label Bas Carbone - Grandes culture

Liming reduces nitrous oxide (N_2O) emissions

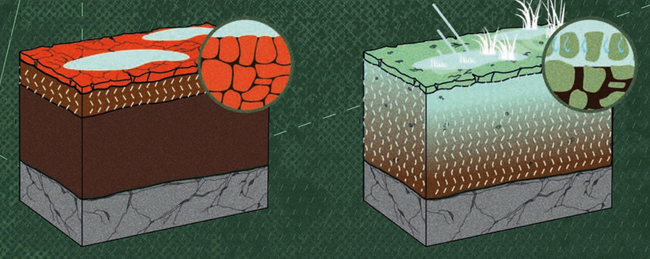


Leading to lower CH_4 emissions a greenhouse gas with a global warming potential 28 times higher than CO_2. Studies show liming can decrease emissions by shifting soil microbial activity away from methanogenesis (-15% to -20%).

Liming suppresses methanogenic microbial activity

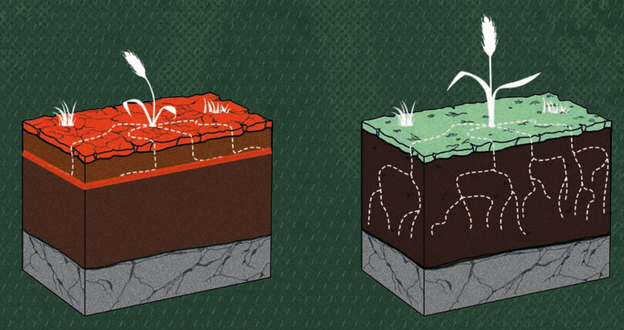
LIMING *for* HEALTHY SOILS

Liming is a practice dating back to ancient times and supports the restoration of our future soils



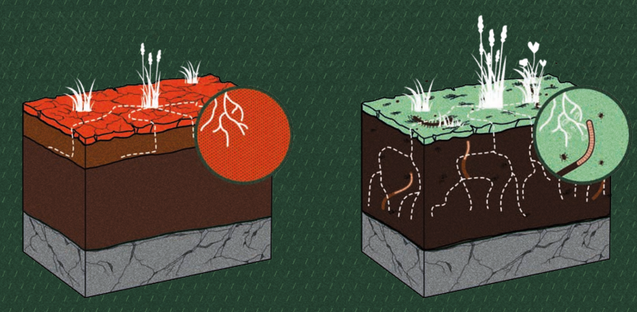
Liming improves soil structure, thereby reducing erosion and improving air and water circulation. A sound soil water regime (water infiltration, storage and utilisation) minimises the effect of drought or excessive precipitation stress triggered by climate change.

Liming improves soil physical properties, enhancing water holding capacity



Liming mitigates aluminium toxicity and improves nutrient uptake, strengthening root development and crop performance

Liming promotes deeper root systems

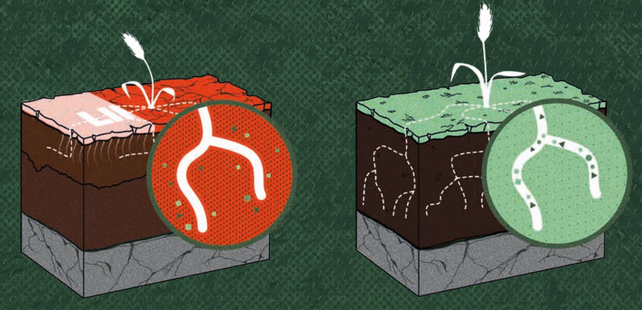


Optimal soil pH stimulates the activity of soil macro- and microorganisms (e.g., earthworms, bacteria), which support soil fertility and promote the build-up of stable humus and Soil Organic Carbon (SOC).

Liming increases biodiversity and biological properties

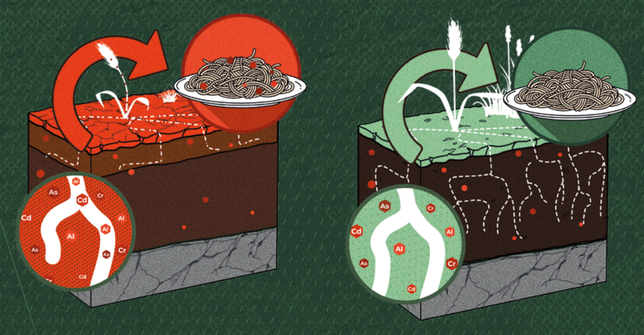
LIMING *for* FOOD SECURITY

Liming allows for higher yields, less inputs, and healthier food.



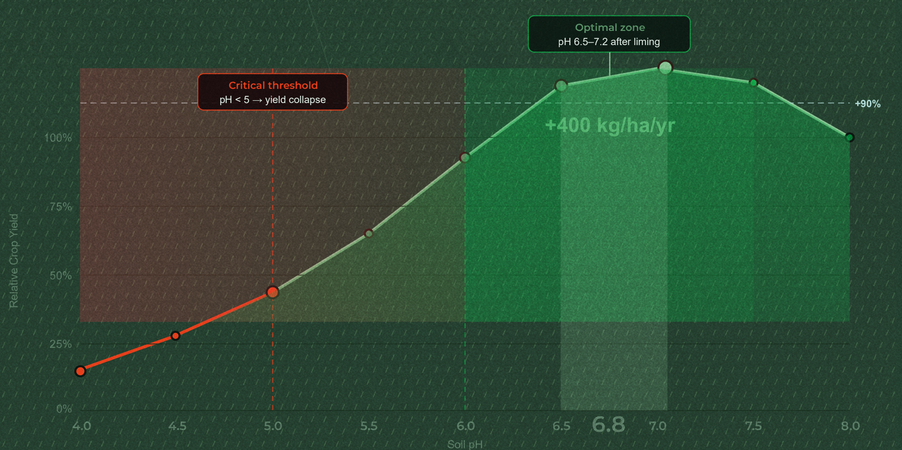
Correcting soils with liming products enhances nutrient availability to crops. Plants absorb nitrogen, phosphorus and potassium more efficiently, reducing nutrient losses and lowering fertiliser inputs and associated cost, including labor and fuel.

Liming reduces the use of fertiliser



Liming improves crop quality by enhancing utilization of nutrients and reducing the mobility, bio-availability and plant uptake of heavy metals such as aluminium, cadmium, chromium and arsenic.

Liming mitigates heavy metal uptake by crops & increases crop quality



Crop yield response curve to soil acidity · Wang et al., 2021 · Global Change Biology · doi: 10.1111/gcb.15607

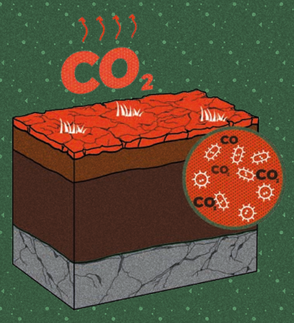
Soil liming increases the soil pH improving plant growth and consequently crop yield. Even crops that are considered resistant to soil acidification can react to liming with a 7% increase in yield. An effective liming programme is estimated to help achieve up to 400 kg of cereals more per hectare per year.

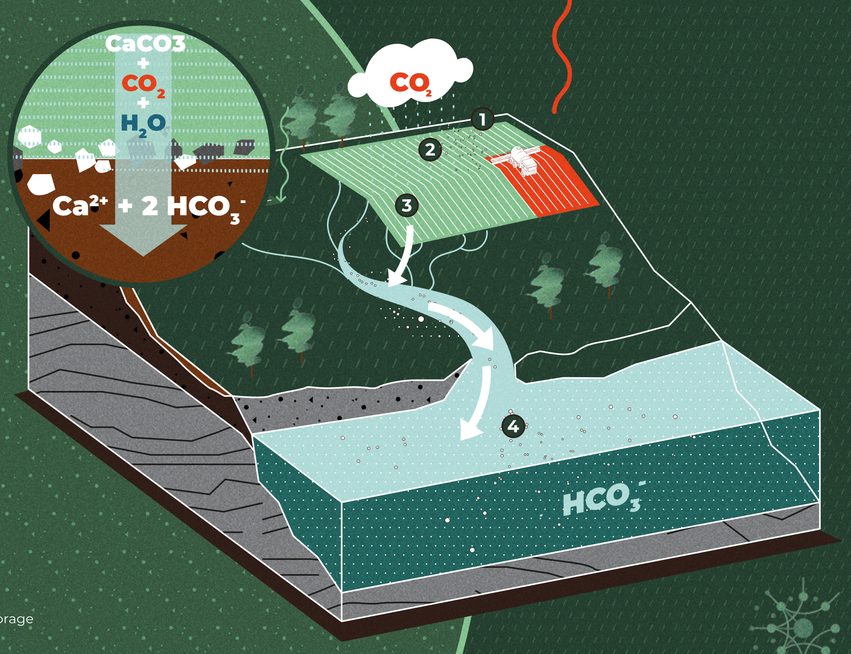
Liming increase crop yields

ERW

Liming can be used for CO_2 sequestration

Enhanced Rock Weathering (ERW) provides durable CDR, with ~0.5 Gt CO_2 yr^{-1} potential by 2070.
Carbonates and lime are well-suited feedstocks in acidic to moderately acidic soil conditions as they are widely available and dissolve quickly, releasing strong alkalinity for precise MRV. Their rapid weathering forms bicarbonate, ensuring long-term CO_2 storage in the oceans.





1. Carbonate rock is applied to the field
2. Rainwater absorbs CO_2 from atmosphere
3. This water reacts with carbonate rock forming bicarbonate
4. Bicarbonate washed out into rivers and the ocean for long-term storage

EUROPEAN CARBON FARMING SUMMIT

Agricultural Liming : Where Climate Action Takes Root

EuLA European Lime Association

CCA Europe

limingforlife.eu

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