



ClieNFarms
Climate Neutral Farms

ClieNFarms Practice Abstracts

Cultivating cover crops to store carbon and support nitrogen recycling for next crop

Marie Collard, Didier Stilmant (CRA-W)

Cover crops play a key role in sustainable agriculture. Sown between two main crops, they help store carbon in the soil, thereby improving soil structure and fertility from an agronomic perspective, while also contributing to climate change mitigation. As they decompose, cover crops also recycle essential nutrients — nitrogen (N), but also phosphorus (P) and potassium (K) — for the following cash crop.

Belgian farmers involved in the ClieNFarms project work together on improving cover crops biomass and increasing the share of cover crops in their rotation. The biomass produced by cover crops is measured and analysed using the MERCI method (Method for Estimating Carbon and Nitrogen Returns from Intercrops), available at methode-merci.fr. This method estimates the amount of nitrogen (but also the amount of phosphorus, potassium and carbon) returned to the soil by the cover crop based on the recorded biomass and share of the different species composing it. This information helps farmers fine-tune their nitrogen fertilization and, in some cases, reduce the amount of synthetic fertilizer applied to the next cash crop. It is a practical approach combining agronomic performance and environment and climate protection.

In addition to these benefits, cover crops also improve the soil's albedo (compared to bare soil) by increasing the reflection of solar radiation, which contributes to mitigating global warming.



Figure 1 : Cover crops after winter wheat and before chicory (cover crop composition: Niger, Phacelia, Alexandrian clover, linen, Abyssinian mustard, Brazilian oat).



Figure 2: Cover crop's biomass measurement. (Cover crop composition: Phacelia, Alexandrian clover, Vicia velosa, Brown mustard).



ClieNFarms
Climate Neutral Farms



THIS PROJECT HAS RECEIVED FUNDING FROM
THE EUROPEAN UNION'S HORIZON 2020
RESEARCH AND INNOVATION PROGRAMME
UNDER GRANT AGREEMENT NO 101036822

-  cliefarms.eu
-  www.x.com/ClieNFarms
-  www.linkedin.com/company/cliefarms/
-  www.facebook.com/clieNFarms
-  www.youtube.com/@cliefarms2778/featured