Carbon removals from Finnish agriculture

Price 49 € / CORC

ITEM

Item URL: https ://puro.earth/100044

Item reference number #100044

DEALER

Soilfood Oy
Homepage address: www.soilfood.fi
Phone: www.soilfood.fi
Email address: tanya.santalahti@soilfood.fi
Contact person: Tanya Santalahti
Location: Kalevantie 7, 33100 Tampere, Finland

DESCRIPTION

Novel carbon removal methodology

Our project is verified following the Soil Amendment methodology and results in CORC20+ credits. The decomposition of organic carbon contained in the Soil Improvement Fibres is modelled with the Yasso-model (https://en.ilmatieteenlaitos.fi/yasso), which is developed by the Finnish Meteorological Institute and used by Finnish authorities for calculating Finland's greenhouse gas inventory. Only the proportion of carbon that is stored in the soil for 20 years or more is considered as a carbon removal. This way the carbon that decomposes during the fast decomposition phase after application is not included in the carbon removal.

Globally, in other soil carbon removal schemes the soil carbon sequestration credits are issued based on shorter crediting periods, ranging between 5 and 20 years depending on the project.

Soilfood is a circular economy companythat aims to replace virgin raw materials with recycled materials in large volumes and quickly. At the same time, we work in co-operation with our customers to reduce emissions and create carbon removals in the soil.

We create a sustainable food chain by processing industry side-streams into fertilizers and soil improvers for agriculture. We add novel value to the circular economy by selling the first carbon removals from Finnish agriculture. Revenue from the sale of carbon removals is divided into three parts: one for the farmer, one for the industrial operator and one for Soilfood, as it takes all involved parties to ensure that the recycling of side streams and the creation of carbon removals is possible. **This way we make sustainable choices more competitive.**

How are carbon removals achieved?

Soil Improvement Fibres are carbon-rich soil amendment products that are manufactured from pulp and paper industry side-streams. Typical fibre application of 25–50 tonnes per hectare adds multiple tonnes of slowly decaying organic carbon to soil.

The carbon removal is achieved by applying the fibres onto fields, which increases the soil carbon stock. When fibres are used as soil improvers, a proportion of the inert organic matter contained in the Product is stored in the soil carbon pool as durable carbon compounds.

Without the soil amendment use the side streams would be incinerated by pulp and paper mills, releasing all the carbon (C) contained in the organic matter into the atmosphere. In Finland, 90 % of these side streams are still incinerated.

CARBON REMOVAL INFORMATION

Carbon removal method : | Soil Amendment

Carbon removals from Finnish agriculture

Price 49 € / CORC

Capture of CO2:	Photosynthesis
Stabilization of CO2:	Soil amendment production
Stabilization of CO2:	Soil amendment production
Permanence:	Over 20 years
Status of production:	Audited
Unit of product volume:	tonne
Embodied carbon in product:	50 - 130 kg
Year of first issuance:	2021
Minimum amount to negotiate:	100

Examples of usage:

Soil Improvement Fibres are carbon-rich soil amendment products that are manufactured from pulp and paper industry side-streams. Typical fibre application of 25–50 tonnes per hectare adds multiple tonnes of slowly decaying organic carbon to soil.

Soil Improvement Fibres add significant amounts of carbon into the soil. For farmers it means better soil fertility, higher yields and lower need for chemical fertilizers. Research by the Natural Resources Institute Finland estimates that increasing soil organic carbon content by 1% **increases cereal yields** by 600 kg per hectare*. Improving soil health by organic carbon addition increases resilience of food production towards changing climate conditions.

*Salo et al. 2019. Orgaaninen aines maaperän tuottokyvyn kulmakivenä -ORANKI-hankkeen loppuraportti.

Co-benefits:

In addition to soil carbon sequestration, the use of Soil Improvement Fibres **reduces greenhouse gas emissions from agriculture**. Soil Improvement Fibre's emission factor for N2O, the most significant greenhouse gas from agriculture, is estimated to be 50 times lower than for chemical fertilizer**. Using Soil Improvement Fibres also benefits soil microbiota and increases soil biodiversity***.

Fibre applications have been proven to be **one of the most effective way to reduce nutrient leaching from farmlands** Soil Improvement Fibre application halves phosphorus leaching*** .

Concentration of suspended solids in leached water was reduced by 59–77% in the first year and by 32–74% in the second year after treatment. After four years, the reduction was 31–64% compared to the control treatment. Phosphorus leaching decreased by 43–50% in the first year and by 37–63% in the second year. After four years, phosphorus leaching was 28–54% lower than in the control treatment ***.

** Charles et al. 2017. Global nitrous oxide emission factors from agricultural soils after addition of organic amendments: A meta-analysis. https://urly.fi/27DT
*** Rasa et al. 2021: Pulp and paper mill sludges decrease soil erodibility. https://urly.fi/27DP

Economic acceleration impact:

Carbon removals from Finnish agriculture

Price 49 € / CORC

Our aim is to make sustainable choices competitive for farmers and for industry. That's why we share the revenue with them.

Revenue from the sale of carbon credits is divided into three parts: one for the farmer, one for the industrial operator and one for Soilfood. **This makes it even more profitable for the farmer** to use Soil Improvement Fibres. At the same time, it creates **a strong economical driver that shifts the side stream utilization in industry** from incineration to circular use.

For more information about the CORC20+ and Soilfood's soil amendments please read this blog post

Posted on :	16/08/2021

AUDIT INFORMATION

Audit statement :	
https://static.puro.earth/live/uploads/tinymce/Suppliers/Soilfood/Soilfood__2022_PURO_Verification_Stater	
Facility ID:	86XF13CL45
Independently verified by:	DNV