

### Why

Carbon storage is agricultural land ("carbon farming") is already being done on many farms, for example by applying farmyard manure to plots, planting and maintaining trees and woody borders or sowing catch crops. Another measure is incorporation of wood chips into the soil to boost the carbon content in the soil. This is crucial for good soil structure and in this way will also improve soil water balance.

### What

There is a whole range of measures that can be taken to promote carbon sequestration; this sheet will focus on the incorporation of wood chips from wood edge management. More information on the other possible measures can be found in the sheets below:

- [Catch crop](#)
- [Crop rotations with organic matter supply](#)
- [Harvest residue incorporation](#)
- [Organic fertilizers: farmyard manure](#)
- [Organic fertilizers: compost](#)
- [Planting wood edges](#)
- [Planting trees](#)
- [Buttercup forage alfalfa](#)
- [Leguminous grass clover](#)
- [Permanent grass herb strip](#)
- [Temporary grass herb strip](#)

Timber edge management (timber edge trimming) produces a great deal of woody biomass. These pruning residues are usually not suitable for high-quality processing and are thus considered a waste stream. By shredding these trimmings into fine wood chips, it can still obtain several useful applications. One such application is incorporation of the wood chips into agricultural soils to promote the maintenance and build-up of carbon content in the soil. In this way, the cycle is closed and you obtain maximum valorization of wood edge management residues.



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## How

### Construction

In terms of dosage of woodchips, several options are possible, usually about 10 to 15 tons per hectare are applied every 5 years, which is approximately 50 m<sup>3</sup>/ha. The spreading of these wood chips is done with a manure spreader equipped with spreading table and discs. The wood chips are best incorporated superficially in the top 5 to 10 cm.

The application of wood chips to the soil initially causes nitrogen immobilization in the soil. This is due to the

high C/N ratio of wood chips, which requires microorganisms with a lower C/N ratio to extract nitrogen from the soil to break down the wood chips. This can have a detrimental effect on crop yield in the first year. Therefore, it is recommended to apply the chippings in the fall and then not sow a winter crop in the field, but a green cover crop. Fixing mineral nitrogen in the soil can, however, provide a lower nitrate residue the following year, so fewer nutrients will leach into surface water.

In any case, it is important to closely monitor the amount of mineral nitrogen in the soil, for example, by performing an N-index analysis. Recent field trials show that applying a limited amount of wood chips (about 10 tons/ha) and using fresh, moist chips can significantly reduce the risk of nitrogen immobilization. Also, mixing wood chips with compost can help to better balance nitrogen management. Finally, it is recommended to sow a fast-growing crop or a legume crop after application to favorably influence the effect of light penetration and further mineralization.

### Layout

Soil incorporation of wood chips has no visual impact on the landscape.

### Maintenance

Each running meter releases on average about 60 kg of fresh wood, which means you need about 250 running meters of wood edges for 15 tons of fresh wood chips. The management of the wood edges follows a cyclical pattern. Depending on the type of wood, coppices are cut short every 7 to 15 years. Moreover, a wood edge is only cut short per 100m annually, in order to minimize environmental and biodiversity disturbance. However, the supply of biomass from sustainable wood edge management in Flanders is very variable and significantly too low to apply this measure on a large scale. After pruning in early spring, the wood chips should be stored until the following autumn for incorporation after summer cultivation.

### Cost

#### Target price

For the incorporation of company-owned wood chips, there is the eco-scheme 'INCREASE ORGANIC COAL CONTENT OF BUILDINGS'. At the bottom of the web page under 'examples' you can view the entire eco scheme.

Note: Annual registration through the collection application is required. Evidence (e.g., photos of incorporation, registrations) may be required during inspection.

### Benefits

#### Economic

The application of wood chips to the soil initially causes nitrogen immobilization in the soil. This is due to the high C/N ratio of wood chips, which requires microorganisms with a lower C/N ratio to extract nitrogen from the soil to break down the wood chips. This can have a detrimental effect on crop yield in the first year. If you don't want this, you can always go with compost.

#### Ecological

Maintaining or increasing the carbon content in the soil obviously brings some important ecological as well as economic benefits. A higher carbon content in the soil provides better water retention capacity, making the soil more resilient to drought. The better soil structure also makes the soil more resistant to heavy rainfall, since the soil has a higher infiltration capacity. The better soil structure also makes the soil less susceptible to water and wind erosion. Furthermore, carbon storage also helps in the fight against climate change.

### What to look out for

#### Legislation

Within the current framework of OVAM VLAREMA legislation, wood chips from your own wood edge management can be applied to the soil. If not, you need a resource declaration from OVAM. This is an analysis of heavy metals and nutrients in wood chips to show that they are not contaminated.

#### Useful links

- [Bierbeek farmers engage in circular carbon buildup](#)

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**Medegefinancierd door  
de Europese Unie**



This sheet has been prepared in the framework of the PDPO project 'KLIMACO – Climate coalitions in the Mechelen Green Region' (2021-2023). The project was carried out by POM Antwerp, Province of Antwerp, Vegetable Experimentation Station, Regional Landscape Rivierenland, Boerennatuur Vlaanderen and Pidpa, with the support of the European Agricultural Fund for Rural Development: Europe invests in its countryside, and the municipalities of Rumst, Kontich, Sint-Katelijne-Waver, Duffel, Lier and Putte.

The ACLIMA-project has received funding from the LIFE Programme of the European Union under contract number LIFE 20 CCA/BE/001720.

Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

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## Examples

Discover some examples of this measure at <https://www.lifeaclima.eu>

This sheet is the version of 18/10/2026