

## CO<sub>2</sub> reduction and storage as part of the Crop.zone portfolio

In order to make European agriculture a CO<sub>2</sub> sink and to establish soils as additional CO<sub>2</sub> stores, a number of measures are necessary. Measures that are completely integrated into agronomically meaningful strategies to improve soil fertility and resilience and lead to fast-acting results are particularly useful. Only in this way will it be possible to achieve climate neutrality for agriculture and the economy in general in the sense of the Green Deal by 2050.

Crop.zone will be able to make significant contributions to many of these packages of measures, which are briefly described here:

1. In many cases, increased organic fertilisation will promote thistles as root weeds, which can then no longer be controlled with increased ploughing because this would release a lot of organic carbon as CO<sub>2</sub> again. Due to its systemic action down to the roots, Crop.zone can make a significant contribution to decisively weakening root weeds without ploughing biodiversity and water out of the soil.
2. When reforesting e.g. with permanent crops such as fruit trees or Christmas trees, there is always a need to protect the trees from fast-growing weeds in the first few years, in the best case using herbicides as little as possible and avoiding to move the soil reducing erosion and protecting soil organisms. Depending on the type of crop and requirements, Crop.zone can develop specific applicators to keep disturbing soil vegetation at a sustainable low level.
3. In the case of land set-aside (e.g. for protected areas), massive infestation with invasive plants occurs more frequently in the conversion years, which can permanently destroy the protection efforts. Since chemical herbicides and soil movement are not an option in these areas, Crop.zone technology can help here and develop specific electrophysical concepts.
4. In bioenergy production, e.g. in short-rotation plantations or with annual or perennial biomass plants, weed pressure by root weeds must be reduced in particular. Only in this way can the plants exploit their potential and at the same time avoid damage to the environment. Crop.zone can contribute both to integrated weed control and, if necessary, to solar drying by siccation.

5. Since in organic farming use of any chemical herbicide is excluded, perennial weeds can spread over the years, which can only be controlled in the long term with deep ploughing or other methods that are not necessarily sustainable. Electrophysical methods with the aid of bio-compatible liquids can become particularly important in the expansion of organic farming to areas with high weed pressure and in the case of accumulating errors in weed management.
6. After the rewetting of bog areas which are still to be used as high-quality wet pasture land or for hay production, hardly usable rushes will spread, which are difficult to control chemically or for environmental reasons. Electro-physical hybrid treatments with special adjustment to the growth form of the rushes by Crop.zone can help here when moors are finally wetted again and serve as CO<sub>2</sub> sinks.
7. In the case of conservation tillage, weeds must be systematically controlled right down to the roots, if possible, without soil movement. In addition, residual stands of greening plants often must be stopped effectively and without additional soil-movement. This is one way to increase soil fertility store carbon in the soil and minimise the risk of erosion. Crop.zone works perfectly as a systemic herbicide without soil movement.
8. When using meadows for grazing or hay harvesting in a way that preserves carbon and nutrients, it is no longer possible to plough for weed control or to improve grass quality, especially not for climate reasons. Through height-selective application without animal-toxic components, stubborn weeds can also be treated repeatedly during grazing or hay harvesting operations without uprooting or moving the soil. Crop.zone technology already supplies the decisive modules for sustainable height-selective weed control on meadows.