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ClieNFarms EIP-AGRI Practice Abstracts

Introducing cover crops in loamy soils

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In Lauragais (South-West of France), soils are often very loamy (with sometimes more than 40 % of loam). Therefore, there is no obligation to grow cover crops between two cash crops. However, cover crops are identified as an efficient way to store carbon in soils. Hence, their introduction can be complex as there is very few days during which the machines can work in the fields as they can easily become moist during autumn.

Depending on the choice of the grown species, it is possible to reduce the fertilizers doses of the cash crop following the cover crop: legumes like faba beans or phacelia are likely to spare about 40 units of nitrogen with a biomass of 2.5 tDM/ha.

In the demonstration farm of the I3S Lauragais, we experiment nearly permanent soil cover to reduce erosion and improve soil fertility. During long intercropping, between durum wheat and sunflower for example, we use 2 type of cover crop: a summer one with sorghum and moha and a winter one with faba bean and phacelia. The main achievement of this succession is that the cover crop is destroyed mechanically, without glyphosate. The summer crop is sown directly just after wheat harvest. The biomass is really depending on the weather. If it is more than 3 tDM/ha, the cover can be harvest as Energy catch crop. This opportunist summer catch crop come in replacement of the winter catch crop initially present in the rotation and which produce some negative effect on weed pest management without glyphosate and on water availability for the sorghum after.

In a similar situation, the introduction of 77 ha of cover crops, in a farm of 177 ha, involves an increase of costs of about 50 €/ha/year, mainly because of the purchase of inputs and the cost of the machinery. As a result, the GHG emissions decreases about 0.7 t CO₂ eq /ha due to the reduction of fertilisation and the storage of carbon in the soil.



Figure 1: Cover crops in the Lauragais I3S.



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