

Do crops matter?

Greenhouse gas emissions from cultivated organic soils

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Conclusions from this study:

No, choice of crop has minor effect on the CO₂ emissions

About 8 % of the agricultural land in Sweden is drained organic soils and these soils emit CO₂ when the organic matter is degraded. Mitigation options for cultivated organic soils are therefore important. The aim of this project is to measure how the choice of crops impacts the CO₂ emissions from a cultivated peat soil.

The effect of different crops on the CO₂ emission from the soil

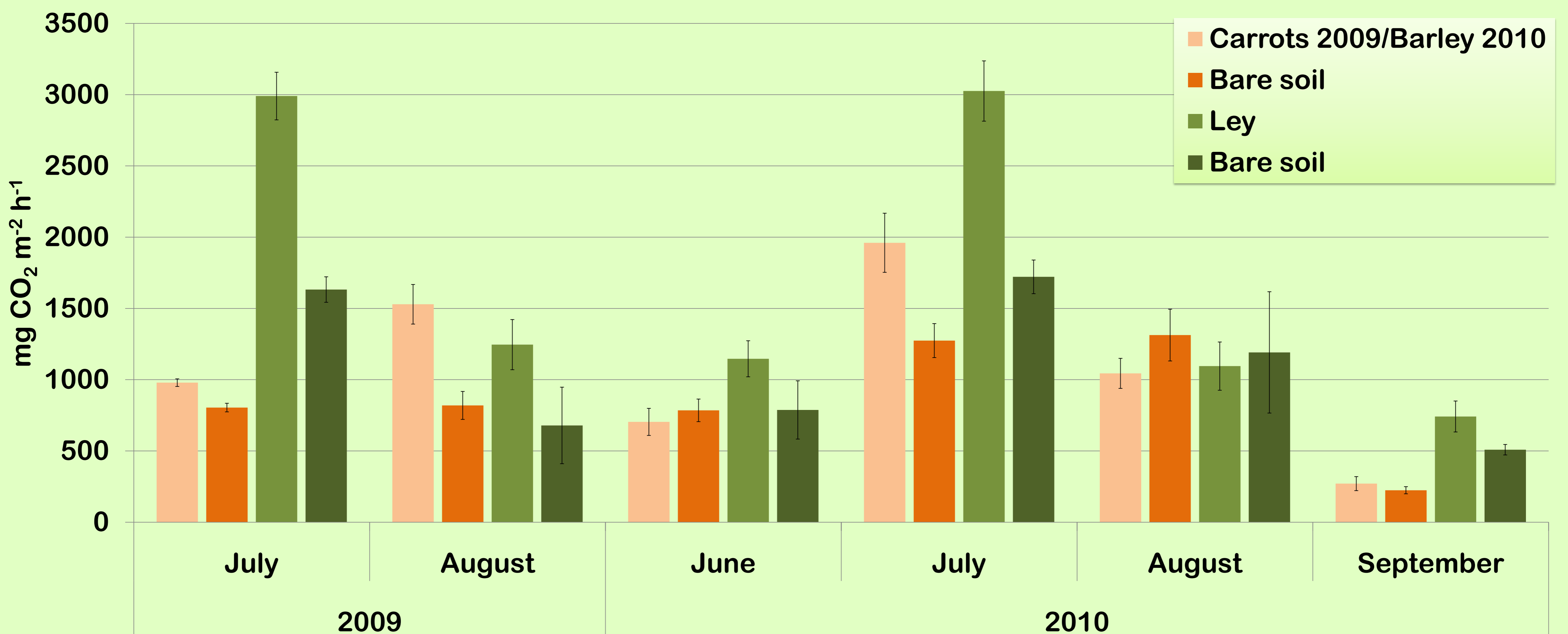


Figure 1. CO₂ emissions from a cultivated organic soil grown with ley and carrots 2009/barley 2010.



Results

Figure 1 shows that the choice of crops has minor effect on the CO₂ emissions from this peat soil. The result depends more on the time of measurement than the type of crop.

Material & method

Two different crops with the same soil properties are compared by sampling CO₂ in the field, on each side of a ditch. Crops compared in this study are ley/carrots in 2009 and ley/barley in 2010.

The field site is Lina mire on the island Gotland in Sweden. Lina mire has a topsoil of fen peat with 62 % organic matter and a subsoil of marl.

In this study the dark chamber method is used for field sampling of CO₂. The CO₂ emissions are calculated from the linear increase of CO₂ concentration in the chamber during incubation time.

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