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EkoForsk

Annual report: EkoForsk project (2011-2012) **Multifunctional cover crops**

Project aim The aim of the project is to determine the efficiency of cover crops (CCs) in stockless organic systems for mineral N retention (N catch crops), for N₂ fixation in autumn and spring, organic matter supply to the soil and the effect of CCs on the subsequent crop in the rotation. Mixtures and sole CCs of common vetch, oil radish, hairy vetch and winter rye will be cultivated in an organic rotation after cultivation of spring barley and spring pea to obtain different levels of available soil N in the autumn in a 3-year project. Multifunctional annual CCs will be compared with an under-sown grass-clover CC. Dry matter production, mineral N in the soil profile, crop accumulation of mineral and symbiotically fixed N determined by stable isotope methodology as well as yield and N accumulation in subsequent crops will be determined.

Activities 2012

The main crops (pea and barley) were well-established (see photo 1).



Photo 1. Pea and barley crops 2011-07-07 Alnarp

However, the wet late summer made harvest of the crops impossible, due to a wet soil (Photo 2)



Photo 2: Pea (in front) and barley in the back completely lodged 2011-08-11. Alnarp

However, two 1 m² plots we harvested from each of the four main plots of each crops. See Table 1.

Crop	Grain DM (g/m ²) ±STD	Straw DM (g/m ²) ±STD
Barley	398±39	386±109
Pea	155±36	327±36

Main plots could not be harvested in due time for establishment of cover crops and consequently the experiment had to be discarded.

Subsequently it was agreed that the project is prolonged one year without extra funding.

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Alnarp 2012-02-14