

## **Meat and milk production in Sweden and its impact on biodiversity and climate**

### **– Differences between grazing-based and concentrate-based systems**

Calculations presented in the report show how different models of meat and milk production create opportunities for biodiversity in e.g. semi-natural pastures and how the models affect the climate by emissions of greenhouse gases. Also business and social costs are calculated. The results suggest that grazing based beef and lamb production are important for the biodiversity. However, grazing-based meat production has larger greenhouse gas emissions than concentrate-based pig and poultry meat production. One way to reduce this conflict of objectives is to combine hardwood production for bioenergy purposes with grazing in certain types of pastures.

Among the results:

Emissions of greenhouse gases per kilogram of meat are higher from grass-fed meat production than from chicken and pig meat production based on concentrated feed. However, emissions could to a greater or lesser extent be compensated for by the carbon storage in cultivated grassland and in trees in the pastures, along with the replacement of fossil fuels by firewood from cleared trees from the pasture. With this compensation, net emissions from grazing animals could be reduced down to equal or even below the emission level of meat production based on concentrated feed. Well-designed production of deciduous trees on, for instance, traditional pastures with limited biological values, could thus benefit climate and at the same time promote biodiversity.

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