Organic farming saves energy

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Organic farmers do not use energy-intensive mineral fertilisers and synthetic pesticides. As a result, organic farms consume on average significantly less energy than conventional farms, although direct energy use is usually higher due to the more frequent use of machinery on organic farms.

Agriculture must become more energy efficient

Turning away from the use of fossil fuels, as well as decarbonisation of society are of central importance for successful climate protection. At the same time, energy must be consumed sparingly, regardless of the climate impact of the energy used, in order to ensure security of supply in the energy sector and to be able to cope with energy shortages. Energy efficiency must therefore also be increased in agriculture and energy use reduced.

Advantages of not using mineral nitrogen fertilisers and synthetic pesticides

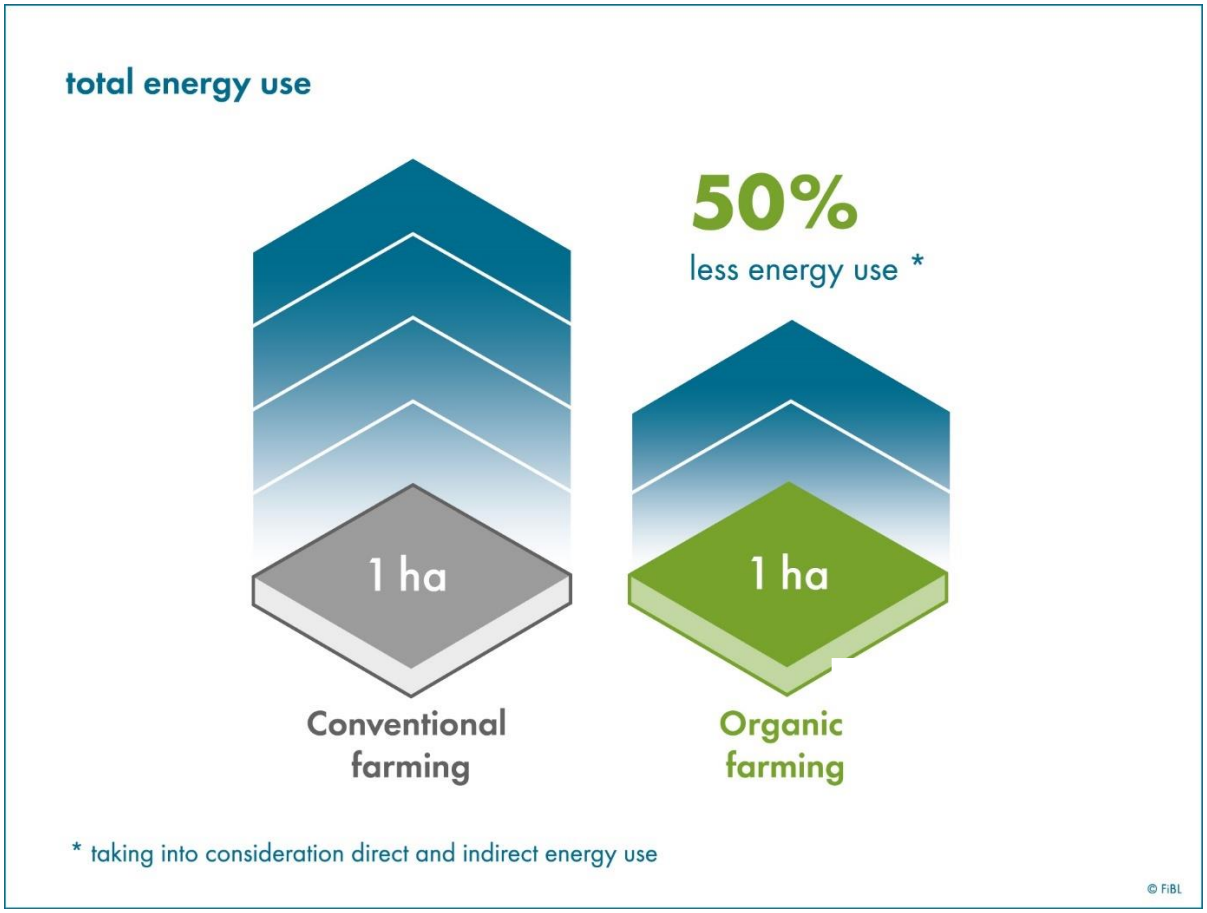
Organic farms often cultivate the soil more intensively, regulate weeds mechanically and require more passes for certain plant protection measures than conventional farms. This leads to higher direct energy use in the form of diesel, especially for plant protection. However, in order to be able to assess the energy input appropriately, it is also necessary to consider the amount of energy required for the production and provision of inputs. There are clear advantages in organic farming here. On the one hand, organic farms save energy by not using energy-intensive mineral nitrogen fertilisers and synthetic pesticides[1], on the other hand, organic farming scores points due to the requirement that feed must primarily be produced on the farm itself or in the same region[1]. This saves energy for transport, especially compared to cases where feed produced abroad is used.

Low overall energy use and higher energy efficiency

Scientific studies show that, taking into account direct and indirect energy use, the total energy use of organic farms per hectare is almost 50 % lower than that of conventional farms[2,3]. Experts therefore assume that a widespread switch to organic farming would lead to substantial energy savings[4,5] and thus decrease CO_2 emissions and reduce the dependence of Germany's agriculture on the use of fossil fuels[3]. It is also worth noting that energy efficiency (i.e. the ratio of energy input to energy output) is usually higher on organic farms, even though organic farming produces lower yields[3,6] .

Sanders et al. 2023. In a nutshell – the societal benefits of organic farming. Final report part 3 of the joint project "Development of a performance-based remuneration system for the protection of the environment" FiBL.

Organic farming halves energy use



Total energy use on organic farms is on average around 50 % lower per hectare than the energy use on conventional farms.

Sanders et al. 2023. In a nutshell – the societal benefits of organic farming. Final report part 3 of the joint project "Development of a performance-based remuneration system for the protection of the environment" FiBL.

Literature and notes

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