

Sustainable biofuels

50 percent of the petrol consumption and 9 percent of the diesel consumption can be covered with biofuels without harming the production of foodstuffs.

In a proposal for directive from January 2008, EU suggests that the production of biofuels should be sustainable if they are to benefit by a tax reduction compared to fossil fuels. This has caused researchers from RISØ and the Technical University of Denmark to compose a report on what it takes for the production of green fuels to be described as sustainable.

It appears from the report that forestry and farming with their connected industries can supply significant amounts of raw materials for the production of biofuels without harming the production of foodstuffs. Thus, the resources would be able to cover 50 percent of the petrol consumption and 9 percent of the diesel consumption, and if part of the crop area for feed and foodstuffs is taken over, the potential would be even greater.

– If we are to take over part of the fields for the production of fuel, the crops should also have another function, explains created the report together with Steffen Bertelsen Blume and Erik Steen Jensen.

Thus, it would not be sustainable to base the production of biofuels on crops

Crop	Litres
Maize	7.587
Lucerne	6.805
Sugar beets	6.741
Winter wheat	5.126
Willow	5.000
Spring wheat	2.607

Table 1. Output of biofuels per hectare for select crops.

such as potatoes, maize and sugar beets, which have a large consumption of diesel, fertiliser and pesticides. However, perennial and nitrogen-fixing crops such as lucerne and clover would be a sustainable solution, as their demand for field work, fertiliser and pesticides is minimal.

Many people have pointed out lucerne as the most sustainable crop, and as it also belongs in the better end of the scale with regard to energy output, it would be an obvious choice for the farmers that want to supply raw materials for the production of biofuels. TS

Source: Calculation of the Danish biomass resource to be used for the production of biofuels for the transport section up to the year 2020, Risø-R-1665.

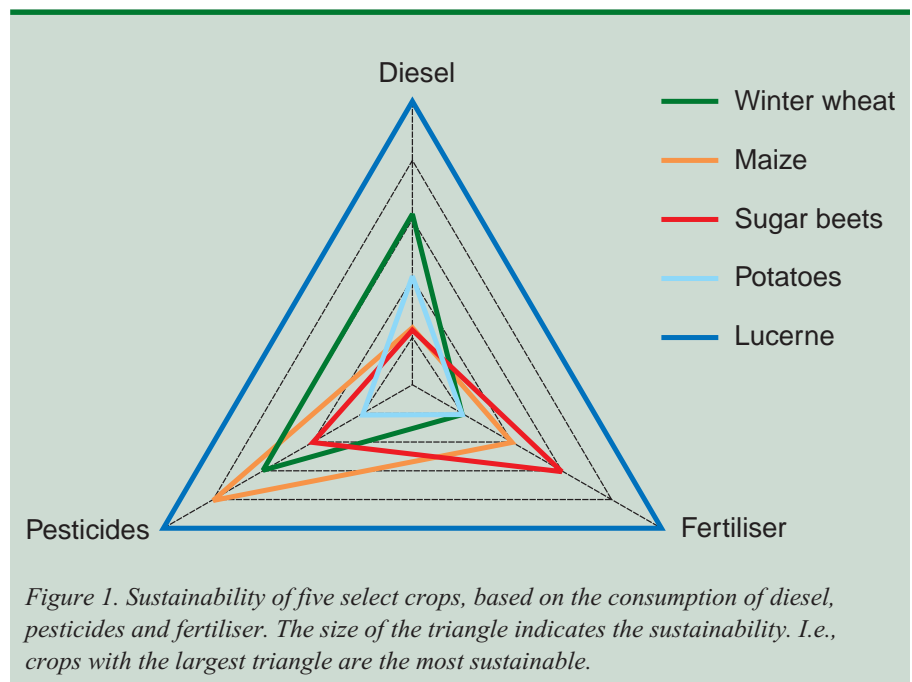


Figure 1. Sustainability of five select crops, based on the consumption of diesel, pesticides and fertiliser. The size of the triangle indicates the sustainability. I.e., crops with the largest triangle are the most sustainable.