



Utilization of less favourable farming areas for short rotation energy tree plantations and crops in rotation

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One of the less conventional possibilities of agroforestry in Europe is the use of energetic tree plantations of high plant density in crop rotation, included in a temporary scale. The establishment of such plantations is justified where the use of other agro-techniques is limited or where higher sales revenues can be achieved through special product utilization options.

In small and medium-yield farmland, fast-growing tree species (eg poplar or black locust) can be grown in medium-high yields and the dendromass produced can be sold as fuelwood or used for private purposes. After harvesting, the cultivated area is further utilized in coppice system. The last harvest of trees is carried out at the end of the lifetime of the short rotation plantation. Then it can be converted to arable cultivation: before the next year's maize sowing the remains of tree plantation have to be removed. In this way, the tree plantation is included in the crop rotation.

There are many positive reasons for using the technology, but it also involves some risk. The main advantage of the system is that it produces a renewable energy source for local energy production, while significantly increasing soil

quality as a leguminous species and subsequently biomass yields. The cultivation of black locust (*Robinia pseudoacacia*) for energy purposes is nowadays justifiable due to the promotion of the use of renewable energy to mitigate climate change.

Due to its high energy density and good burning properties, it is easy to use after any preparation (crushing, compacting, baling). In areas with low yields, it is justifiable to replace the agricultural crops with black locust, and even achieve higher yields than with poplar. Due to the specificity of the species (strongly spiked) only fully mechanized technologies can be used.

Further information:

http://www.eurafagroforestry.eu/files/pub/20190805_fa_ctsheetsheet_35_en_web.pdf



Figure 1. Black locust energy plantation at the age of three years, planted at 0.5 x 1.5 m spacing (left). Black locust energy tree bales (right). Photo: Marosvölgyi B.

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