
# Newsletter IEA Bioenergy Task 37: 10/2017

Sustainable Energy Crops

## Switchgrass may be option for farmers who have lost topsoil

The loss of fertile topsoil from agricultural fields is an economic problem for modern farmers. a study from the University of Missouri has found that switchgrass, which is a perennial plant and long known for excellent biogas production, improves soil quality and can be grown on farms that have lost fertile topsoil. The searchers examined farming plots with varying levels of topsoil, which were established in 2009. Each plot had varying amounts of topsoil. Corn, soybeans and switchgrass were grown on each plot, and after five years, the researchers examined the soil density and water permeability of each plot. They found that the switchgrass had improved the soil quality of the plots with little or no topsoil on which it grew. This study was published in the *Soil Science Society of American Journal.* More

## Sugarcane and napiergrass store 3 times as much carbon in soil as is lost in

Two biofuel crops in Hawaii, sugarcane and napiergrass, an excellent source of biogas, may sequester more carbon in soil than is lost to the atmosphere, according to a study from the University of Hawaii Manoa, U.S. Like other tropical C4 grasses, they have a large carbon-storing root biomass that could offset carbon-dioxide fluxes occurring during cultivation. The scientists monitored conventional sugarcane and non-tilled napiergrass crops in Hawaii, measuring the above- and below-ground biomass and assessing the greenhouse gas flux. By the end of the two-year study, both crops had successfully sequestered more carbon in the soil than was lost from the soil surface. The result needs to be proven in long year research. More

## Food versus fuel dilemma can be solved by sequential cropping on farms

The Italian Biogas Association promotes and demonstrates the sequential cropping providing food or feed with the main crop and energy by the second crop on some of their member's farms. In order to give scientific evidence of the low iLUC input of this method they asked Ecofys to make a sound study on a large farm in Italy with 255 hectares of land and a stable of 650 cows having used sequential cropping since 2011. It also features a biogas installation with a production capacity of 1 MW of electricity and digestate as a fertilizer. The study looked at the yields but also at the wider implications of sequential cropping, how it affects the land and water use as well as the business case for the practice. Results show that sequential cropping successfully increased the productivity of the land, but it also increased the quality of the soil, evidenced by an increased carbon uptake. More

## Biogas could provide a quarter of Ireland's gas needs

A report by the Irish Sustainable Energy Authority shows biogas from animal manure, food waste and grass could provide about 28% of the country's gas needs. These low-cost waste feedstocks could produce biogas equivalent to just over 3% of natural gas supply in 2015. A much larger resource, is grass silage. Much of the grassland is currently under-utilized and be available for additional silage production. Grass silage could produce up to 837 ktoe of biogas, equivalent to 22% of natural gas supply in 2015. More