

## **Miscanthus based products value chain: economic perspective**

***Ing. Aleš Paulu, Ing. Anna ElBarky Hubatová-Vacková, prof. Ing. Vladimír Kočí,  
Ph.D., MBA, VŠCHT v Praze***

### ***Souhrn***

In transition to a circular economy, bio-based products are increasingly utilized as an alternative with reduced environmental impacts and possible economic savings. Miscanthus x Giganteus is known for its benefits of phytoremediation during cultivation, however further benefits arise from the possibilities of its biomass processing. Miscanthus can be either converted into energy or further utilized into products such as pulp, paper, packaging products and insulation. Additionally, accumulated waste from cultivation can be converted to biogas to produce energy, and biochar that can be returned to soil to enhance yield and improve soil parameters. The aim of the CORNET MiscanValue project is to establish and analyse the value chain of sustainable Miscanthus based products, including cultivation, phytoremediation, waste and biomass processing and product manufacture. One of the goals of the projects is an economic analysis of the individual steps of the value chain, which will allow to express the detailed costs and highlight space for improvement. To this end, Life cycle costing (LCC) tool is used, which describes all the costs associated with a product or service starting from the initial costs to the final end-of-life. In this conference contribution, several scenarios of processing Miscanthus biomass are mapped by LCC and compared as an alternative to widely used products on the market. The outputs of the study are to be used by small and medium enterprises and businesses to aid in a shift to a circular economy with less waste produced and lower environmental impacts.