

July 27, 2021

Furniture from the biogas plant

The Hallertau is Germany's largest hop-growing region. During harvesting, hop bine chaff is left over, which is converted into environmentally friendly bio natural gas on site in a biogas plant. But that is not the end of the utilization chain for this fiber plant. Researchers at the German Institutes of Textile and Fiber Research Denkendorf (DITF) have used the plant-containing biogas digestate to produce a composite material that can be used to make furniture.

Laminates are in great demand in the furniture industry because they can be designed very flexibly. The composite material made from biogas digestate developed at the DITF with their project partners is a particularly sustainable variant. To produce it, these plant-based residues are first cleaned in an environmentally-friendly way. From this mass, the DITF and Reutlingen University have developed a wet laid nonwoven that is pressed together with a bio-based resin system to form a composite material. It is load-bearing and can be processed in a variety of ways. The project group has created an initial demonstrator from the material.

The project is an example of successful circular economy and value creation. Using biogas digestate as an industrial raw material is an environmentally-friendly alternative to their previous use as fertilizer, which increases nitrate pollution of the soil and is also significantly restricted by new regulations. Chemical additives are deliberately avoided in the production process, and if offcuts from the textile industry are also used in the design of the furniture, this results not only in unusual designs but also in further added value for the environment.

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Hop plant. Photo: pixabay

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Unwashed biogas digestate. Photo: DITF



Impregnating the nonwoven with bio-based resin. Photo: DITF

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Small piece of furniture made of biogas digestate composite material. Photo: DITF