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Biogas Plants as Key Units of Biorefinery Concepts – Options and their Assessment –

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Highlights

- Biogas plants are in general versatile processes that can act as a sink to degrade basically any kind of organic waste material (exception: untreated lignocellulosic biomass) into a multitude of products, among them a widely useable energy-rich biogas
- Catch crops are an important part of a future bio-economy since they can be used for soil protection to prevent leaching losses or even to increase the nitrogen content in the soil (e.g. clover binds atmospheric nitrogen).
- Even though highly developed, the roughly 8500 agricultural plants that are currently under operation in Germany offer huge potential for transformation in integrated biorefineries. Especially catch crops can increase their revenue without increasing the land use.
- To allow for an easy and successful implementation such biorefinery concepts should mainly utilize equipment that is simple to maintain and control (e.g. mechanical treatments, physical separation, and aqueous extraction).
- Therefore, promising processing options of catch crops in integrated biogas biorefineries include pressing of clover grass, mechanical separation and extraction of active ingredients like the colorant carthamidin in Safflower, solid/liquid separation of digestate including digestate drying and pelletizing, as well as biogas purification to biomethane.

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