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Silkworm waste management in biogas production

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In time of waste utilization problems, sericulture focuses not only on the cocoon production, but also on other ways that can benefit the farm's economy and help with environmental protection. It is necessary to find new sources of income for farmers not only through cocoon selling, but also by the multiple uses of by-products. Insect farming technology provides a cheap source of biomass, which may be a good material in biogas production. Studies showed that the substrates, both silkworm breeding waste and caterpillar excreta, generate a biogas yield similar to other substrates of agricultural origin, such as animal manure. Fermentation of silkworm excreta under mesophilic conditions produces 167.32 m^3/Mg TS of methane and 331.97 m^3/Mg TS of biogas, while fermentation of silkworm breeding waste yields 256.59 m^3/Mg TS of methane and 489.24 m^3/Mg TS of biogas. Presentation shows a part of an extensive research project concerning management of products and by-products obtained from sericulture. The presented study allows investors and farmers to easily estimate the amount of electricity and heat offered by the available substrate.

Biography

Malgorzata Lochynska has completed her PhD at Adam Mickiewicz University in Poznan. She is the Head of the Department of Silkworms Breeding and Mulberry Cultivation at Institute of Natural Fibers and Medicinal Plants in Poznan, Poland. She has published 70 papers in international journals and attended 93 research conferences.

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