

Energy_recovery_from_biodegradable__waste_in_grain_processing_industry

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Topic

Energy

Title of the Paper

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Form of Presentation

Presentation

Short Description (maximum 2500 characters)

The management of biodegradable (BD) waste is one of the most important environmental problems in the grain processing industry. BD waste enters to the production with unprocessed raw materials, later it generates in every stage of grain processing until raw material becomes commodity.

BD waste from grain processing is considered to be non hazardous waste and is classified in category 02 03 of the European waste catalogue. BD waste management, especially dumping, becomes increasingly expensive and one of the most popular ways to deal with this waste today is composting.

The paper is focused on analysis of the possibility to use BD waste for production of alternative fuel. Cleaner production audit revealed two most significant aspects: (1) the generation of biodegradable waste in grain processing is up to 18.3 kg/t of product; (2) energy consumption is up to 108.3 kWh/t of product. Theoretical and experimental investigation in a pilot grain processing company have proved that the use of biodegradable waste for production of alternative fuel in addition to energy produced would reduce the amount of BD waste up to 8.51 kg/t of product.

The mass and energy balances of the processes mentioned above, environmental and economical benefits are presented and discussed in the paper.

Key words: energy recovery, alternative fuel, cleaner production, grain processing, biodegradable waste.