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The Incineration of Swine Feces Using Low Quality Charcoal as an Auxiliary Fuel and the Complete Use of the Heat Energy

A report of the City Area Program of Miyakonojyo basin

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Abstract: In order to incinerate the swine feces, which causes subterranean water pollution in the Miyakonojyo basin, low quality charcoal was used as auxiliary fuel. Through this method, swine feces which do not self-burn can be converted into an energy source. From the viewpoint of the energy yield, it is preferable that the processing temperature of the charcoal is less than 300°C. There are some advantages in mixing swine feces and charcoal ; the mixture produces sufficient heat energy for self-burning, the bad odor of feces decreases, the drying of feces becomes easier and faster, and the handling of feces is improved. A technical scale experiment for the continuous incineration of the feces-charcoal mixture was done for 48 hours. During the experiment, the amount of steam generated from the system was measured. The result revealed that the quantity of the steam is insufficient for high-temperature kiln-drying system such as 120°C, but would be useful for a mild-temperature kiln-drying system. Because the energy efficiency is quite high, it is expected that the direct burning of wood biomass, though it is low-technology, will contribute to the large saving of fossil fuel.

Keywords: swine feces, charcoal, biomass fuel, incineration, kiln dry

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