

ABSTRACT

An increase in the population of a country is always followed by an increase in the need for food. In order to meet these food needs, the big problem that is being faced by the Government of Indonesia is realizing national food security. Most areas in Indonesia, have sandy soil that is very difficult to grow food crops. To be able to meet food needs, this study proposes livestock waste (cow, goat, and chicken dung) to be processed into a nano composter as a solid sample in the Updraft Gasification system. The experiment was carried out on a laboratory scale by knowing the nutrients and water content in the updraft gasification, then testing the results of the fertilizer on several plants. Tests on plants were carried out with variations in soil type, fertilizer, ratio of fertilizer and soil, plants, and with water and without water. This study aims to use livestock waste to be used as organic nano composter fertilizer. Besides that, it is also to determine the content contained in the nano composter fertilizer as a result of the updraft gasification system in the form of solids produced from chicken, goat, and cow manure raw materials. With nano composter fertilizer in the form of solids (solid samples) it is expected to be able to grow plants in barren (less fertile) soils, increasing food crop yields so that food security can be achieved.

Keywords: Nutrient test, updraft gasification, nano composter organic fertilizer, livestock waste.