

4th International Conference on

Bioprocess and Bio Therapeutics

October 20-21, 2016 Houston, USA

Bionversion ability of *Pleurotus ostreatus* on the nutritional evaluation of *Samanea saman* plant as non-conventional feed resources for farm animals

Korsah, G.M¹, Dzogbefia P. V¹, Alemawor¹, F, Attah-Kotoku, V¹¹Kwame Nkrumah University of Science and Technology, Ghana

Feed is the major input cost in production of animals in Ghana and other developing countries. The need to search for an alternative source of feed to replace the usual conventional ones is worthwhile. The rain tree (*Samanea saman*) pods are abundant and lie as wastes when they mature and fall. Though their use as animal feed is challenged with digestibility and anti-nutritional problems through biotechnological means, these wastes could be turned into valuable animal feeds. This study was carried out on the degradation of *Samanea saman* whole pods (SSWP) and *Samanea saman* empty pods (SSEP) using *Pleurotus ostreatus* in a solid state fermentation (SSF) for a period of eight (8) weeks. The fungus was able to improve the protein content significantly ($P < 0.05$) above the control samples and protein enhancement was highest in SSEP (23.86%), whereas SSWP recorded (13.90%). The crude fibre significantly reduced ($P < 0.05$) in both substrates fermented, with SSEP recording the highest of 24.37% and SSWP 18.36%. The ash content improved significantly ($P < 0.05$) with SSWP recording 41.42% and SSEP 22.95% at the end of the fermentation period for 8 weeks. The tannin levels in SSWP reduced by 58.54% and 50.72 % in SSEP. The study demonstrated that SSF of these agro wastes with *P. ostreatus* increased the level of limiting nutrients e.g. proteins and minerals while at the same time decreasing the fibre levels to enhance their digestibility for monogastrics and ruminants.

mkorsahgh@gmail.com

Development of a simple biogas digester as a source of renewable energy and sustainable livelihood

Fabrice L. Yengong

University of Buea, Cameroon

The Majority of Cameroonians living in the rural areas depend on agriculture for their sustainable livelihood. Many have no access to electricity and they use firewood as their major source of energy for cooking. This situation is not sustainable and also has a negative impact on the environment. The biogas digester is not only a cost effective solution to address these concerns but also presents less negative impact to the environment. It is with this in mind that we have developed a biogas digester that is a simple, yet powerful sanitation technology option that is capable of: (i) processing human and animal feces into safe and free fertilizer; (ii) reducing cases of groundwater contamination by processing feces instead of having it discharged untreated; (iii) creating biogas for use in cooking and household lighting; (iv) empowering women and families by reducing their time spent on gathering fuel wood and cooking; (v) reducing indoor air pollution brought about by burning fuel wood; and (vi) eliminating carbon dioxide (CO₂) and methane (CH₄) emissions during fermentation of openly-discharged sewage, thereby helping to reduce the threat of climate change. We therefore present this simple technology that has the potential of transforming lives especially in rural areas.

lamfu2035yengong@gmail.com