1815 TREATING SWINE WASTE WITH ANAEROBIC SEQUENCING BATCH REACTORS AT HIGH AMMONIA LEVELS: PERFORMANCE AND MICROBIAL COMMUNITIES

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The capability of anaerobic systems to produce large quantities of biogas from animal wastes has been demonstrated, however, a lack of knowledge on the bacterial composition within these systems prevails. Four 5-liter anaerobic sequencing batch reactors (ASBRs) were operated for over two years treating swine waste (with low solids levels – 20 g volatile solids [VS]/l) at 25 °C. During the first year (0-378 days), all four ASBRs were operated at similar conditions. In particular, total ammonium concentration was kept at ~1200 mgNH_4^+-N/l. During the second year (379-730), total ammonium concentration was increased in two out of the four reactors to ~4000 mg-N/l, while keeping the other ASBR pair at relatively low levels (~1200 mg-N/l). The reactors performance was assessed with conventional techniques and additional tests were performed on the biomass of the ASBRs. For instance, methane yield was not statistically different among the four reactors in the first year, and was 0.32 ± 0.020 l CH_4/g VS (volatile solids fed). For the second year, methane yields were ~0.30 ± 0.018 and ~0.17 ± 0.007 l CH_4/g VS for low and high ammonia reactors, respectively. Therefore, the performance of the anaerobic digesters was indeed affected with increasing total-N concentration (subsequently increase of free ammonia level as well). The bacterial community structure was assessed through 16S ribosomal RNA gene sequencing surveys for inoculums, swine waste, and the ASBR biomass samples at low and high ammonia levels. Even though the reactors performance was affected by total ammonium addition, bacterial community analyses did not show any significant difference between low and high ammonia biomass samples neither at phyla levels nor at species levels, with *Firmicutes* (~55%) being the most predominant phylum, followed by the phyla *Bacteroidetes*.

1831 PNT EFFECT ON DIVERSITY OF RHIZOBIA ASSOCIATED WITH *Sesbania sesban*

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Tilemsi rock phosphate (TRP) of Mali is one of the best rock phosphates in West Africa. But it is less used because of it's insoluble form.
The main objective of this study is to investigate it's effect on rhizobia living under a multipurpose leguminous tree. The substrate was Senegalean soil which was less poor in phosphorus and not sterilized. The experience included treatments with TRP and treatments without TRP. The study was conducted during 105 days and nodules were taken every 21 days. At the end of experience, 116 nodules had been collected and analysed by molecular tools (PCR/RFLP).
In the results, 16 strains of rhizobia have been detected from 116 nodules. The presence of rhizobia strains varied in presence or absence of the insoluble phosphate.
It seem that TRP of Mali has an effect on rhizobia diversity contrarily to an soluble phosphate (TSP) which haven't no effect on rhizobia diversity under the same leguminous.

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