

São Paulo - Brazil - May - 24<sup>th</sup> to 26<sup>th</sup> - 2017



# 10<sup>th</sup> INTERNATIONAL WORKSHOP ADVANCES IN CLEANER PRODUCTION

“TEN YEARS WORKING TOGETHER FOR A SUSTAINABLE FUTURE”

---

## Optimization methane production through anaerobic codigestion of swine waste

CAILLOT, V. A.<sup>a</sup>, SOUZA, J.<sup>a</sup>, SILVA, C. B.<sup>a</sup>, SECCO C.<sup>a</sup>, FRANCISCO, A. C.<sup>a</sup>

*a. Universidade Tecnológica Federal do Paraná*

*\*Corresponding author, [vanessacailot@hotmail.com](mailto:vanessacailot@hotmail.com)*

---

### Abstract

Continuous primary energy consumption has motivated the scientists of the world to search for renewable energy sources that could substitute fossil fuels. Anaerobic co-digestion has been cited in the literature as effective way to treat waste from swine breeding and to produce biogas for the generation of energy, but for efficiency in methane production it is important to choose the best co-substrate and a mixing ratio more efficient. The objective of this study was to investigate in the literature the substrates that have been used, the amount of methane generated and the difficulties and advantages associated with the process. The results demonstrated superior yield of methane production with the anaerobic co-digestion with respect to DA of the animal manure alone. Proving that the choice of complementary substrate generates the equilibrium of several parameters of the cosubstrate mixture: macro and micronutrients, C:N ratio, pH, toxic compounds generated higher biogas production and greater plant viability.

**Keywords:** *Anaerobic codigestion, swine waste, biogas.*

---

---

“TEN YEARS WORKING TOGETHER FOR A SUSTAINABLE FUTURE”

São Paulo – Brazil – May 24<sup>th</sup> to 26<sup>th</sup> - 2017