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# IMPACT OF SUPPLEMENTARY NUTRIENTS ON CODIGESTION OF AGRICULTURAL WASTE: STUDY OF TEMPERATURES

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## HIGHLIGHTS

- Agricultural waste codigestion was studied at different temperatures-35, 42, 55 °C-
- Addition of extra nutrients was studied in all the temperatures ranges
- Adding extra nutrients improves anaerobic codigestion in biogas production
- 35 °C was the temperature with more remarkable impact after adding extra nutrients

## Abstract

Different wastes treated together can be the supplement of nutritional deficiencies for the microorganisms involved in anaerobic codigestion (AcoD). In this study, the presence of macromolecules and trace elements on AcoD of agricultural waste was assessed. An extra nutrients solution that plays a key role in the microbiological metabolism was used at three different conditions: mesophilic (35 °C), intermediate (42 °C) and thermophilic (55 °C). The main results showed that at 35 °C in the presence of nutrients, biogas production reached 1.5-fold the production of biogas without them. Additionally, productivity was 1.9 times higher than that for the process without nutrients.

Also, 42 °C without nutrients posed an interesting approach due to the uncommon use of this intermediate temperature, which has been demonstrated to be worth considering (55 % of VS

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